



RECEIVED
VENTURA COUNTY
12 OCT 12 AM 10:15
A.P.C.D.

**SIMI VALLEY LANDFILL
AND RECYCLING CENTER**

2801 Madera Road
Simi Valley, California 93065
(805) 579-7267
(805) 579-7482 Fax

October 10, 2012

Mr. Kerby Zozula
Ventura County Air Pollution Control District
669 County Square Drive, 2nd Floor
Ventura, CA 93003

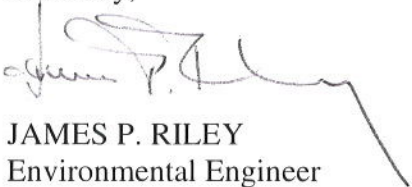
Subject: Part 70 Permit Reissuance Application
Simi Valley Landfill and Recycling Center
Simi Valley, California (Permit to Operate 01395)

Dear Kerby:

As requested in your letter dated September 11, 2012, same subject, please find the enclosed facility maps with flare and engine locations highlighted. Also enclosed is the cover sheet from the latest Compliance Certification submitted to your office and US EPA dated February 15, 2012.

Should you have any questions or comments concerning this submittal, please do not hesitate to contact me at (805) 579-7479.

Sincerely,



JAMES P. RILEY
Environmental Engineer

cc: Scott Tignac, WMC

Ventura County Air Pollution Control District
COMPLIANCE CERTIFICATION PERMIT FORM

Cover Sheet

Form TVPF45/07-21-03 Page 1 of 1

A copy of each compliance certification shall be submitted to EPA Region IX at the following address:


Mr. Gerardo Rios, Chief
Permits Office (AIR-3)
Office of Air Division
EPA Region IX
75 Hawthorne Street
San Francisco, CA 94105

Confidentiality

All information in a Part 70 permit compliance certification is public information. The Part 70 permit is also public information.

Certification by Responsible Official

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this compliance certification are true, accurate, and complete.

Signature and Title of Responsible Official:  Title: <u>DISTRICT MGR</u>	Date: <u>02-15-12</u>
--	--------------------------

Time Period Covered by Compliance Certification: <u>01</u> / <u>01</u> / <u>2011</u> (MM/DD/YY) to <u>12</u> / <u>31</u> / <u>2011</u> (MM/DD/YY)
--

SCS ENGINEERS

June 26, 2012
No. 01201056.04 Task 20

Mr. Kerby Zozula
Ventura County Air Pollution Control District
669 County Square Drive
Ventura, CA 93003


SUBJECT: SIMI VALLEY TITLE V RENEWAL APPLICATION, REVISED TABLE 2, SIMI VALLEY LANDFILL AND RECYCLING CENTER, SIMI VALLEY, CALIFORNIA

Dear Mr. Zozula,

On behalf of Waste Management of California, Inc. (WM), SCS Engineers (SCS) hereby submits to the Ventura County Air Pollution Control District (VCAPCD) a revised Table 2 in Appendix F, Potential to Emit Emission Source Estimates for the Landfill. The Potential LFG generation rate was updated to the correct value of 4,980 scfm. This Table 2 will replace the previous Table 2 in the application for the Title V Renewal for the Simi Valley Landfill and Recycling Center, (SVLRC), submitted on June 25, 2012.

If you have any questions, please contact Gabrielle Stephens at (562) 426-9544 or Pat Sullivan of SCS Engineers at (916) 361-1297.

Sincerely,



James Kim
Staff Scientist



Patrick S. Sullivan, R.E.A., C.P.P.
Senior Vice President
SCS ENGINEERS

Enclosures

cc: Gabrielle Stephens, SCS Engineers (w/enclosures)
Pat Sullivan, SCS Engineers (w/enclosures)
Jim Riley, Waste Management (w/enclosures)

RECEIVED
VENTURA COUNTY
12 JUN 27 AM 9:58
A.P.C.D.

**TABLE 2. POTENTIAL TO EMIT EMISSION SOURCE ESTIMATES FOR THE LANDFILL
SIMI VALLEY LANDFILL
SIMI VALLEY, CALIFORNIA**

CAS NUMBER	COMPOUNDS	Molecular Weight (g/Mol)	Ave. Concentration of Compounds Found In LFG	Fugitive Emission Rate from Landfill (lbs/hr)	Fugitive Emission Rate from Landfill (tons/yr)
Hazardous Air Pollutants (HAPs)^(a)					
71556	1,1,1-Trichloroethane (methyl chloroform)*	133.41	0.0100	1.03E-03	0.0045
79345	1,1,2,2-Tetrachloroethane*	167.85	0.0415	5.40E-03	0.0237
75343	1,1-Dichloroethane (ethylidene dichloride)*	98.97	0.1930	1.48E-02	0.0649
75354	1,1-Dichloroethene (vinylidene chloride)*	96.94	0.0451	3.39E-03	0.0149
107062	1,2-Dichloroethane (ethylene dichloride)*	98.96	0.2227	1.71E-02	0.0749
78875	1,2-Dichloropropane (propylene dichloride)	112.99	0.0230	2.02E-03	0.0088
107131	Acrylonitrile*	0.04	0.0250	7.75E-07	0.0000
71432	Benzene*	78.11	2.4000	1.45E-01	0.6372
75150	Carbon disulfide	76.13	0.3200	1.89E-02	0.0828
56235	Carbon tetrachloride*	153.84	0.0150	1.79E-03	0.0078
463581	Carbonyl sulfide	60.07	0.1830	8.52E-03	0.0374
108907	Chlorobenzene*	112.56	0.1410	1.23E-02	0.0539
75003	Chloroethane (ethyl chloride)	64.52	0.2390	1.20E-02	0.0524
67663	Chloroform*	119.39	0.0100	9.26E-04	0.0041
74873	Chloromethane (methyl chloride)	50.49	0.2490	9.75E-03	0.0427
106467	Dichlorobenzene (1,4-Dichlorobenzene)*	147.00	0.7690	8.77E-02	0.3842
75092	Dichloromethane (Methylene Chloride)*	84.94	0.5870	3.87E-02	0.1695
100414	Ethylbenzene	106.16	6.7890	5.59E-01	2.4497
106934	Ethylene dibromide (1,2-Dibromoethane)*	187.88	0.0150	2.19E-03	0.0096
110543	Hexane	86.18	2.3240	1.55E-01	0.6807
7783064	Hydrogen Sulfide*	34.08	44.267	1.17E+00	5.1276
78933	Methyl ethyl ketone	72.11	10.557	5.90E-01	2.5875
108101	Methyl isobutyl ketone	100.16	0.7500	5.83E-02	0.2553
127184	Perchloroethylene (tetrachloroethylene)*	165.83	0.6810	8.76E-02	0.3838
108883	Toluene*	92.13	25.2670	1.8052	7.9121
79016	Trichloroethylene (trichloroethene)*	131.40	0.3010	3.07E-02	0.1344
75014	Vinyl chloride*	62.50	0.2700	1.31E-02	0.0574
1330207	Xylenes*	106.16	15.8000	1.30E+00	5.7011
	Mercury (total) ^(c)	200.61	0.0003	4.54E-05	0.0002
Totals: HAPs				6.152	26.963
Criteria Air Pollutants					
	Total Non-Methane Organics (NMOs) as Hexane ^(d)	86.18	1166.99	77.992	341.829
	VOCs ^(e)	86.18	455.124	30.4167	133.313

Notes:

- (a) List of hazardous air pollutants was from Title III Clean Air Act Amendments, 1990, and include compounds found in landfill gas, as determined from a list in AP-42 Tables 2.4-1 ("Default Concentrations for Landfill Gas Constituents, 11/98").
- (b) Average concentration of compounds found in LFG based on "Waste Industry Air Coalition (WIAC) Comparison of Recent Landfill Gas Analyses with Historic AP-42 Values," and site-specific data collected from a 2009 Air Toxics Source test conducted October 6, 2009. Compounds marked with an "*" reflects site-specific data. A copy of the WIAC paper and LFG analyses are attached in Appendix G.
- (c) Concentration of Mercury based on the Revised EPA AP-42 Section 2.4 Table 2.4-1 (11/98).
- (d) Based on 2009 Air Toxics Source test conducted October 6, 2009 by Horizon Air Measurement Services, Inc, converted methane to
- (e) According to AP-42, Table 2.4-2 (11/98), note C, VOC content at MSW sites with unknown concentrations equals 39% by weight of total.

Variables:

MODEL INPUT VARIABLES:		
Methane Concentration (%)	55%	
Potential LFG generation rate (year 2052)	4,980	SCFM

EXAMPLE CALCULATIONS

(HAPS AND VOCs)

Total Pollutant Flow Rate (To Flare) = ((Molecular Weight of Compound[g/mol])*(Concentration of Compound[ppm])
(Total LFG generated [cfm])(525,600)/(2,000*385,050,000))

Table of Contents

Section	Page
1.0 Introduction.....	1
2.0 Equipment.....	1
3.0 General Nature of Business	2
4.0 Facility Process Description.....	3
5.0 Compliance Assurance Monitoring (CAM)	5
6.0 Changes to the Existing Title V Permit.....	5
7.0 Emissions Data.....	6
8.0 Title 40, Part 63 Subpart ZZZZ.....	6
9.0 GHG Emissions.....	6
10.0 Application Fee Estimate	12

List of Tables

No.	Page
Table 1. GHG Emission Factors.....	7
Table 2. GHG Types.....	8
Table 3. Biogenic GHG PTE.....	8
Table 4. Anthropogenic GHG PTE	9
Table 5. Regulated Anthropogenic Non-Fugitive GHG PTE.....	9

Appendices

A	VCAPCD Title V Forms
B	Insignificant Activities List
C	Process Flow Diagrams
D	Site Maps
E	Tables from Current Part 70 Permit
F	VCAPCD Emissions

1.0 INTRODUCTION

On behalf of Waste Management of California, Inc., (WM), SCS Engineers (SCS) hereby submits a Title V permit renewal application to the Ventura County Air Pollution Control District (VCAPCD) for the Simi Valley Landfill and Recycling Center (SVLRC) located in Simi Valley, California.

According to Rule 33.6, and 40 Code of Federal Regulations (CFR) 70.5(a)(1)(iii), the Title V Permit renewal application must be submitted no more than 18 months prior the expiration date (December 31, 2012) and no less than 6 months prior to the expiration date on the Part 70 permit. The deadline for this application is June 30, 2012.

This application includes equipment/source descriptions, emissions information, Title V forms, and other details encompassing a complete Title V renewal package. The Part 70 renewal forms can be found in Appendix A. The insignificant activities list from the current Part 70 permit as required can be found in Appendix B. Other components of the application are further detailed below.

2.0 EQUIPMENT

The majority of the ancillary activities and equipment associated with operations at SVLRC qualify as insignificant activities and has been identified in the Insignificant Activities Table of the current Part 70 permit. Section 4.2 below summarizes the changes to the insignificant activities.

The equipment that does not qualify as insignificant in the current Part 70 permit is listed below.

- Landfill Gas (LFG) collection and control system (GCCS) consisting of one (1) 44 Million British Thermal Unit per hour (MMBtu/hr) LFG flare, one (1) 75 MMBtu/hr LFG flare, two (2) 1,877 brake horsepower (BHP) LFG-fired internal combustion (IC) Engines, one (1) 1,500 gallon condensate tank with vent line, one (1) 10,000 gallon waste water tank with vent line, and electric powered gas blower(s)
- One (1) 105 BHP diesel-fired emergency standby engine
- One (1) Cold Cleaner (exempt pursuant to Rule 23.F.10.c)

Please note, an Authority to Construct (ATC) for a new 165 MMBtu/hr John Zink LFG flare was issued on January 18, 2011, to replace the two existing LFG flares. The ATC has yet to be incorporated into the Title V permit, but it is assumed it will be included as part of this renewal process. This change in the existing Part 70 permit is detailed in Section 6 below. For a quantification of the site's emissions, the VCAPCD maintains an Emissions Inventory on-file and as such, no emission calculations are necessary for this application per No. 3 of the permit reissuance application guidance.

3.0 GENERAL NATURE OF BUSINESS

The primary function of SVLRC is for the disposal of municipal solid waste (MSW). The landfill has been in operation since 1970. Between 1989 and 1990, a LFG collection system and McGill Environmental System LFG flare were installed at the site. The objective of the collection system at that time was to control the migration of combustible gases to off-site soils (California Code of Regulations Title 27). The McGill flare was decommissioned in April 2011.

In 2001, the facility added a new blower system (consisting of two 75 Hp blowers) and a John Zink LFG flare. The Permit to Operate (PTO) Number 01395, originally issued in 1991, was revised to incorporate the addition of the new devices and to increase the LFG collection rates. The Federal Part 70 Operating Permit (Title V) was issued on January 1, 2003. The permit was revised mid-2003 to allow an increase in the LFG collection rates to provide adequate LFG control capacity to account for increased LFG generation at the site.

In May 2003, the landfill submitted a permit application for two IC engines. The ATC Number 01395-200 for these engines was issued in November 2003. The engines have been in full operation since April 1, 2004. In October 2004, a new Title V permit was issued including the engines. In July 2005, a new Title V permit was issued to include the existing emergency engine. In July 2006, a new Title V permit was issued to incorporate modifications to Rule 74.17.1 and 40 CFR 60 Subpart WWW compliance. The facility has been operating under the referenced Title V permit since that time.

In March 2009, the landfill submitted a permit application for an ultra-low emission, enclosed John Zink flare rated at 165 MMBtu/hr. The ATC Number 01395-270 for this flare was issued in January 2011. The flare has been in full operation since April 18, 2011. The 75 MMBtu/hr John Zink flare and McGill flare were decommissioned in April 2011, and replaced by the new 165 MMBtu/hr John Zink flare. A draft PTO (Application No. 01395-271) and Part 70 Permit No. 01395 was issued by the VCAPCD on June 5, 2012. The final PTO for the new flare, including any changes to this draft PTO will be included in the renewed Title V permit.

SVLRC received approval to expand in 2011 under Permit Case No. LU07-0048; Major Modification No. 8 to Conditional Use Permit (CUP-3142). The revised CUP boundary extends to the north and west of the previous permitted facility boundary to encompass 368 acres of waste disposal area with a total capacity 119.6 million cubic yards. The life of the landfill will be at a minimum until 2051.

The facility is permitted to accept a total of 9,250 tons per day combined for MSW and Recycling. The permitted daily throughput for MSW will be 6,000 tons and 3,250 tons for recyclables. Waste management units are constructed in accordance with Federal, State and local law and will include a base liner and LCRS. The landfill gas collection and control system will be included to maintain compliance.

In December 2011, the landfill submitted a minor Title V Modification for the new flare's ATC for a condensate injection system. The ATC was issued in April 2012.

4.0 FACILITY PROCESS DESCRIPTION

The following is a brief description of the current facility processes and operations, as required by No. 26 of the permit reissuance application guidance. The disposal of waste as well as any ancillary functions is accomplished using a variety of on-site processes as described below.

4.1 PERMITTED OPERATIONS

- Refuse hauling vehicles deliver refuse to the landfill as well as remove certain materials and by-products from the site. Refuse hauling vehicles and other on-site vehicles generate fugitive dust (particulate matter) emissions while traveling on haul roads and other portions of the landfill site. One control measure to mitigate dust at the site is using a water truck. The water truck moves at slow speeds across the site, spraying a wide area with water to reduce particulate emissions.
- Heavy equipment traffic on roads and the landfill surface, which generates fugitive dust emissions, also occurs on-site. One control measure to mitigate dust at the site is using a water truck.
- Excavation, transportation, stockpiling, and deposition of soil cover material on the landfill surface generate fugitive dust emissions. Control measures include using a water truck.
- Generation of fugitive dust emissions due to the effects of wind on cover stockpiles also occurs.
- The majority of the vehicles deliver MSW to the main portion of the landfill where it is deposited and covered with cover soils. Microbial degradation of buried refuse generates potential LFG emissions, containing non-methane organic compounds (NMOCs), volatile organic compounds (VOCs), and hazardous air pollutants (HAPs). These emissions are both fugitive and non-fugitive. These emissions are controlled through a GCCS as required by the New Source Performance Standards (NSPS). In addition, another control measure is the application of adequate cover soil over refuse to control particulate matter emissions, odor, refuse blowing, and LFG emissions.
- The LFG collection system consists of collection wells and piping network, LFG blowers, liquid knockout vessel, and (1) enclosed LFG flare with pilot flame and two (2) LFG IC engines. Please note, an ATC for a new Condensate Injection System to be added to the 165 MMBtu/hr flare was submitted to the VCAPCD on December 16, 2011 and issued in April 2012. The majority of the LFG emissions are destroyed by the flare and IC engines, which includes HAPs, VOCs, and NMOCs. As a product of combustion, the flare and IC engines emit nitrogen oxides (NO_x), carbon monoxide (CO), sulfur oxides (SO_x), and combustion particulate matter (PM).
- Landfill condensate is collected and stored in a 1,500 gallon tank and in a 10,000

gallon tank. The collected condensate is either injected into the landfill or will be injected into the flare.

- Gasoline and diesel fuel storage and dispensing occur on-site. The facility maintains one aboveground 500-gallon gasoline storage tank, one aboveground 550-gallon diesel storage tank, one underground 15,000-gallon diesel storage tank, four 240-gallon aboveground new oil storage tanks, and one aboveground 495-gallon waste oil storage tank.
- One 105 HP diesel-fired emergency standby engine is used on an as-needed basis.
- Three pumps and two air compressors are also on site for various activities which are under the insignificant activities list.
- Cold solvent cleaning tank and operation is used for equipment repair and maintenance.
- One 550-gallon untreated leachate holding tank is used to store leachate prior to leachate going through activated carbon filters and the two 5,000 gallon treated leachate tanks.

Process flow diagrams for the permitted equipment can be found in Appendix C. The street map and facility map can be found in Appendix D.

4.2 INSIGNIFICANT SOURCES

The updated insignificant activities at SVLRC that are exempt from permitting requirements are listed below. This list reflects the current operations at SVLRC; therefore, it is requested that the insignificant activities list from the Part 70 permit be updated. The insignificant activities list from the current Part 70 permit as required can be found in Appendix B, with strikeout changes showing the updated insignificant activities operations.

- Architectural Coatings
- Two (2) – Air Compressors
- Three (3) – Pumps
- Five (5) – Light towers
- Solvent Cleaners
- General use Aerosol Spray Paints
- Steam cleaner/pressure washer
- Leachate Tanks
- One (1)-500 Gallon Above Ground Gasoline Storage Tank
- One (1)-550 Gallon Above Ground Diesel Storage Tank
- One (1) – 15,000 Gallon Underground Diesel Storage Tank
- Four (4) – 240 Gallon Above Ground New Oil Storage Tanks
- One (1) – 495 Gallon Above Ground Waste Oil Storage Tanks
- Two (2) – 85 Gallon Above Ground New Oil Tanks
- Two (2) - 100 Gallon Above Ground Used Oil Tanks

- Two (2)- 130-Gallon Above Ground New Oil Tanks

No other activities conducted in the operations and maintenance (O&M) of the subject facility are expected to impact and/or cause potential emissions of regulated air pollutants. Please note that an ATC for the new flare was issued on January 18, 2011 and a draft PTO was issued on June 5, 2012.

5.0 COMPLIANCE ASSURANCE MONITORING (CAM)

In the current permit, a permit shield is implemented for 40 CFR 64 due to an exemption for emission units and activities subject to emission limitations and standards proposed by Environmental Protection Agency (EPA) pursuant to Section 111 and 112 of the federal Clean Air Act. The permit shield references emission generating (EG) sites but this same exemption from CAM requirement applies to NSPS sites as well since both NSPS/EG regulations are found in Section 111; therefore the permit shield should remain in place. Due to this permit shield, compliance assurance monitoring is not required. WM would like the section in the stationary source description and permit summary to reflect that this shield is for NSPS sites.

6.0 CHANGES TO THE EXISTING TITLE V PERMIT

On June 5, 2012, VCAPCD issued a draft PTO (Application No. 01395-271) and Part 70 Permit No. 01395 incorporating the new 165 MMBtu/hr John Zink flare, and updating the status of the decommissioned 44 and 75 MMBtu/hr flares. As required for the renewal process, copies of the following tables from this draft Part 70 permit can be found in Appendix E:

- Periodic Monitoring Summary (Table 1)
- Permitted Equipment and Applicable Requirements Table (Table 2) and its attachments
- Permitted Throughput/Consumption Limit Table (Table 3)
- Permitted Emissions Table (Table 4)

It is requested that the final PTO for this new flare will be included in the renewed Title V permit, including any changes to the draft PTO. The following are a list of changes that WM would like made to the existing Title V permit:

1. WM would like the addition of a the final new PTO of the 165 MMBtu/hr John Zink flare to the Part 70 Permit and the appropriate Tables, the Permit Summary and Statement of Basis Section, and the General Recordkeeping Requirements Section.
2. WM would like the addition of the Condensate Injection System to the PTO for the 165 MMBtu/hr John Zink flare for improvements to the Condensate Management System per the Minor Modification Application submitted on December 16, 2011. The ATC issued and is available for incorporation during the renewal process.
3. WM would like to update the Insignificant Activities list in the Part 70 Permit to reflect current site operations.

7.0 EMISSIONS DATA

Emissions information for the permitted equipment, excluding the engines, is provided by the VCAPCD emissions inventory (Appendix F). Updated engines, and landfill surface fugitive criteria and hazardous emission summary is not available from the District, and is provided separately in Appendix F Table 1, and Table 2, respectively.

8.0 TITLE 40, PART 63 SUBPART ZZZZ

40 CFR Part 63, Subpart ZZZZ, National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating IC Engines (RICE), establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from RICE engines located at major and area sources of HAP emissions. Because the two 1,877 brake horse power (bhp) IC engines are area sources of HAP emissions, below a Potential to Emit (PTE) of 10 tons of any single HAP and 25 tons of combination of HAP per year, they are subject to subpart ZZZZ. According to Section 63.6595(a), existing stationary RICE located at an area source of HAP emissions must comply with the applicable emission limitations and operating limitations no later than October 19, 2013.

According to Section 60.6603, for RICE located at an area source of HAP emissions, SVLRC must comply with the operational requirements in Table 2d. LFG engines at areas sources of HAPs have no emissions requirements and must only comply with the operational criteria in Table 2d, Item 11. This includes:

- Change oil and filter every 1,440 hours of operation or annually, whichever comes first
- Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first
- Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first

This new rule will be incorporated into the permit, and the facility will comply with the limitations no later than October 19, 2013.

9.0 GHG EMISSIONS

LFG derived emissions of carbon dioxide (CO₂) are considered biogenic, meaning they come from a biofuel and do not contribute to a net increase in atmospheric carbon dioxide. On July 1, 2011, the United States Environmental Protection Agency (USEPA) issued a rule (40 CFR Parts 51, 52, 70, and 71, Federal Register Volume 76, No. 139, pages 43490 to 43508) to defer the inclusion of biogenic carbon dioxide from Prevention of Significant Deterioration (PSD) and Title V programs under the Tailoring Rule.

Methane (CH₄) and nitrous oxide (N₂O) are combustion byproducts and are GHGs. Even when resulting from the combustion of a biofuel, CH₄ and N₂O are considered anthropogenic. These

anthropogenic emissions continue to be included in the Title V and PSD programs despite the proposed deferral of CO₂ emissions from a biogenic source.

All GHG from combustion of fossil fuels, such as diesel, are anthropogenic and must be included in the GHG emissions for Title V and PSD evaluation.

The landfill itself is a source of fugitive CH₄. The fugitive CH₄ is not regulated under federal or VCAPCD PSD rules, but is included here for Title V reporting purposes only.

The sources at the site are a LFG Flare, two IC Engines, Diesel Heater, and the landfill surface. The flare is permitted to operate at a capacity of 165 MMBtu/hr. Each IC Engine is permitted to operate at a capacity of 17.5 MMBtu/hr, and the Diesel Heater at 0.3 MMBtu/hr. The landfill surface is expected to have a maximum methane generation rate of 4,980 scfm in 2052. The modeling has been limited to 40 years projection at 86,429,694 tons, and will be periodically updated until it meets the full design capacity of 95,680,000 tons. Seventy-five (75) percent of the generated methane was assumed to be captured and destroyed in the control devices, and 10 percent was assumed to be oxidized in the landfill surface.

GHG emissions were calculated using emission factors obtained from 40 CFR Part 98 (Federal Mandatory Reporting Rule [MRR]) Tables C-1 and C-2, except the carbon dioxide emission factor for LFG, which was obtained from Title 17 Code of California Regulations (CCR) Subchapter 10, Appendix A. The MRR was not used as the source for the LFG emission factor because the emission factor for LFG listed in the MRR only includes the CO₂ resulting from combustion and does not include CO₂ occurring in the LFG which passes through the combustion device without being combusted. GHG emission factors are shown in the Table 5 below.

Table 1. GHG Emission Factors

Fuel	Emission Factors (kilograms/MMBtu)		
	Carbon Dioxide	Methane	Nitrous Oxide
LFG	104.06	3.2E-03	6.3E-04
DIESEL	73.96	3.0E-03	6.0E-04

Table 6 shows a summary of which GHG emissions are anthropogenic, biogenic, fugitive, and regulated by source and gas under Title V and PSD programs. Currently permitted GHG sources and their emissions are shown in Tables 7 through 9. Biogenic unregulated emissions are shown in Table 7. Anthropogenic emissions are shown in Table 8. Regulated GHG emissions are shown in Table 9. Regulated emissions include those counted against major source and major modification status under PSD permitting programs. Fugitive emissions included simply for Title V reporting are not considered subject to regulation under the Clean Air Act. CH₄ and N₂O have greater impact as GHG than CO₂; therefore, GHG emissions are converted to CO₂ equivalent (CO₂e) emissions when expressing the total emissions.

Table 2. GHG Types

Anthropogenic	Biogenic	Fugitive	Unregulated	Regulated
Landfill surface CH ₄ Flare CH ₄ N ₂ O IC Engines CH ₄ N ₂ O Diesel engines CO ₂ CH ₄ N ₂ O	Landfill surface CO ₂ Flare CO ₂ IC Engines CO ₂	Landfill surface CO ₂ CH ₄	Landfill surface CO ₂ CH ₄ Flare CO ₂ IC Engines CO ₂	Flare CH ₄ N ₂ O IC Engines CH ₄ N ₂ O Diesel engines CO ₂ CH ₄ N ₂ O

Table 3. Biogenic GHG PTE

Scenario	Current Permitted					
Source	John Zink Flare		IC Engine 1	IC Engine 2	Diesel Heater	Landfill Fugitive
Activity Rate	165 MMBtu/hr		17.5 MMBtu/hr	17.5 MMBtu/hr	0.3 MMBtu/hr	4,980 scfm
Emissions (short tons)	CO₂	165,795	17,584	17,584		79,931
	CH₄	0	0	0	0	0
	N₂O	0	0	0	0	0
Source Total GHG Emissions (short ton CO₂e)	165,795		17,584	17,584	0	79,931
Total Biogenic GHG (short ton CO₂e)	280,894					

Table 4. Anthropogenic GHG PTE

Scenario	Current Permitted				
Source	John Zink Flare	IC Engine 1	IC Engine 2	Diesel Heater	Landfill Fugitive
Activity Rate	165 MMBtu/hr	17.5 MMBtu/hr	17.5 MMBtu/hr	0.3 MMBtu/hr	4,980 scfm
Emissions (short tons)	CO ₂	0	0	0	214
	CH ₄	5.1	0.5	0.5	0.009
	N ₂ O	1.004	0.106	0.106	0.002
Source Total GHG Emissions (short ton CO ₂ e)	418.2	44.4	44.4	214.7	549,342
Total Anthropogenic GHG Emissions (short ton CO ₂ e)	550,064				

Table 5. Regulated Anthropogenic Non-Fugitive GHG PTE

Scenario	Current Permitted				
Sources	John Zink Flare	IC Engine 1	IC Engine 2	Diesel Heater	Landfill Fugitive
Activity Rate	165 MMBtu/hr	17.5 MMBtu/hr	17.5 MMBtu/hr	0.3 MMBtu/hr	4,980 scfm
Emissions (short tons)	CO ₂	0	0	0	214
	CH ₄	5.1	0.5	0.5	0.009
	N ₂ O	1.004	0.106	0.106	0.002
Total Regulated GHG Emissions (short ton CO ₂ e)	418.2	44.4	44.4	214.7	0
Total (short ton CO ₂ e)	722				
Change in PTE (short ton CO ₂ e)	0				

SVLRC does not propose to increase the fuel flow to any sources or any change that would result in a different emission factor; therefore, there will be no increase in regulated GHG emissions from SVLRC.

PREVENTION OF SIGNIFICANT DETERIORATION (PSD) MAJOR STATIONARY SOURCE STATUS

This facility is an existing landfill facility that is not a major stationary source under the federal New Source Review (NSR)/PSD program. Landfills are not included among the list of 28 source categories that are regulated under a 100 ton per year (tpy) threshold for “regulated NSR pollutants” to determine “major stationary source” status. 40 CFR 52.21(b)(1)(i)(a). Because this existing landfill facility does not fall within the 28 listed categories, it is subject to a 250 tpy threshold for “regulated NSR pollutants,” excluding fugitive emissions, to determine NSR major stationary source status. Per 40 CFR 52.21(b)(1)(i)(b). This facility does not emit or have the PTE 250 tpy or more of regulated NSR pollutant, and therefore, is not an existing major stationary source for NSR/PSD purposes.

Regardless of whether a facility has the PTE any other regulated NSR/PSD pollutants above 250 TPY, a facility’s emissions of GHGs (the aggregate group of CO₂, methane, N₂O, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons emissions) are considered to be a “regulated NSR pollutant” only when the GHGs are “subject to regulation” for the facility per 40 CFR 52.21(b)(49). This facility’s GHGs are not “subject to regulation” at this time, and therefore the facility’s GHGs are not a “regulated NSR pollutant” at this time.

At an existing stationary source, such as this landfill facility, GHGs may be “subject to regulation” for NSR program purposes only when the facility proposes to undertake a physical change or a change in the method of operation as described in 40 CFR 52.21(b)(49)(v)(b)(“At an existing stationary source ... when such stationary source undertakes a physical change or change in the method of operation ...”); see also 75 Fed. Reg. 31514 (June 3, 2010). If no physical change or change in method of operation is being proposed for an existing facility, then the facility’s GHGs are not “subject to regulation.” At the time an existing facility proposes a physical change or a change in the method of operation, the facility’s GHG emissions would be evaluated to determine whether the GHGs would be “subject to regulation.” Each project increasing GHG emissions may be evaluated to determine if the GHGs are “subject to regulation” (and therefore a “regulated NSR pollutant”) – for purposes of only that project. Based on the above, no additional discussion of PSD applicability is necessary since no modification or physical change is being proposed herein. This is simply a Title V Renewal.

Under a permitting action to renew a Title V air operation permit for an existing stationary source, such as this one, where there is no associated physical change in or change in the method of operation, GHGs are not “subject to regulation.” Because the GHGs are not “subject to regulation,” the GHGs are not considered a “regulated NSR pollutant.” This facility, at the time of this Title V renewal and without an associated physical or operational change, would not trigger applicability of the NSR/PSD program. The analysis of whether the facility has the potential to emit “major source” levels as defined under the Title V rules is separate and not tied to whether the facility would be an NSR/PSD major stationary source. Currently, the facility’s regulated GHG emissions are 722 tpy of CO₂e, making it an existing minor source under PSD.

TITLE V COMPLIANCE

The analysis of whether a facility is an NSR major stationary source for GHGs is completely separate from an analysis of whether the facility has the potential to emit GHGs at major source levels for purposes of the Title V program. This facility is subject to the Title V air operation permit program because of the applicability of an NSPS rule, and there is no question of Title V applicability. Whether the facility has the PTE GHGs at Title V major source emission levels should not be confused with an analysis of whether the facility is an NSR major stationary source.

The federal Title V air operation permit rules provide that the term “major source” includes stationary sources that emit or have the potential to emit at least 100 TPY of any air pollutant “subject to regulation.” Fugitive emissions are included in this amount only if the facility falls within one of 28 listed source categories. Per 40 CFR 70.2, “major source” (2). As a landfill, this facility does not fall within the listed source categories, and therefore fugitive emissions are not included in calculations to determine major source emission levels under the federal Title V rules.

Under the Title V program, the air pollutants subject to regulation for this facility currently include: NO_x, SO₂, PM, PM₁₀, CO, VOCs, and NMOC. Excluding fugitive emissions, this facility has the PTE Title V major source emission levels for CO.

The federal and VCAPCD Title V rules define “subject to regulation” for purposes of GHGs to mean that a stationary source emits or has the potential to emit 100,000 tpy of CO₂e emissions (sum of all six pollutants’ emissions, taking into account the global warming potential each pollutant). Per 40 CFR 70.2, “subject to regulation.” As stated above, fugitive emissions are not considered in this total to determine major source emission levels and are excluded from the Title V PTE under both federal and VCAPCD regulations. However, according to the VCAPCD Rule 33.2.A.3.a, fugitive emissions are to be included in the same manner as stack emissions, but this requirement is only applicable to reporting purposes, and should not be included in the major source status. In addition, currently biogenic CO₂ emissions are not counted as part of this total until July 21, 2014, although this exclusion could become permanent based on US EPA’s final determination. (76 Fed. Reg. 43490 (July 20, 2011).) Based on the calculations provided, the SVLRC is a minor source under federal and VCAPCD Title V requirements.

PROJECT TITLE V APPLICABILITY

For purposes of the federal Title V rules, this facility’s GHGs (excluding fugitive emissions and biogenic CO₂ emissions) are estimated at 722 tpy of CO₂e, which is less than the 100,000 TPY CO₂e threshold, and therefore this facility’s GHGs are not “subject to regulation.” Therefore, this facility does not emit or have the PTE GHGs at Title V major source levels.

Based on the emission estimates in **Section 9**, and per 40 CFR 70.2 and 71.2 and the recently promulgated deferral of permitting requirements for biogenic CO₂, SVLRC is not an existing major source of GHGs under the Clean Air Act pursuant to the threshold of 100,000 tpy of CO₂e total GHG set forth in the definition of “major source.” Since the SVLRC is an existing Title V facility, any modification to or renewal of the Title V permit triggers the requirement to add

GHGs to the permit. The inclusion of this GHG inventory should satisfy the necessary requirements for adding GHGs to the Title V permit. At the time of the submission of this application, there are no additional federal, state, or local regulatory requirements applicable to GHG emissions from SVLRC, other than the emissions estimates provided herein, and covered by Title V Permit Program authority. Federal GHG Mandatory Reporting Rule requirements published at 40 CFR 98 were enacted under sections 114(a)(1) and 208 of the Clean Air Act and, as such, are not included in the definition of “applicable requirements”, as found at 40 CFR 70.2 and 71.2, to be included in a Title V Permit. (See also, 74 FR 209, page 56,288.)

10.0 APPLICATION FEE ESTIMATE

The following are submitted as part of this application:

Filing Fee	\$450.00
<u>Deposit</u>	<u>\$2,000.00</u>
Total Fees	\$2,450.00

ATTACHMENTS

APPENDIX A
VCAPCD Title V Forms



General Facility Information
Part 70 Permit Reissuance Application Form

1. Permit Number: 0 1395 Date: April 6, 2012

2. Company Name:
Waste Management of California, Inc.

3. Company Mailing Address:
2801 Madera Road

4. Company City, State Zip Code:
Simi Valley, California 93065

5. Responsible Official and Title (as defined in 40 CFR 70.2 and VCAPCD Rule 33.1):
Scott Tignac, District Manager

6. Responsible Official Telephone Number:
(805) 579-7267

7. Facility Name (Usually Same As Company Name):
Simi Valley Landfill and Recycling Center

8. Facility Street Address (or Lease Name/Field Name):
2801 Madera Road

9. Facility City, CA Zip Code:
Simi Valley, California 93065

10. Title V Permit Contact Person and Title:
James Riley, Environmental Engineer

11. Title V Permit Contact Person Telephone Number:
(805) 579-7479

12. Type of Organization:

<input checked="" type="checkbox"/> Corporation	<input type="checkbox"/> Sole Proprietorship
<input type="checkbox"/> Partnership	<input type="checkbox"/> Government

13. Facility Operating Schedule: 9.5 Hours/Day 7 Days/Week 52 Weeks/Year

\$2,450.00 6/26/12 #78071

14. Facility SIC Code: 4953

CAM(Compliance Assurance Monitoring) Plans

15. Are you required to submit a CAM plan for any emissions unit at this facility? ☐ Yes ☒ No

If yes, submit a CAM plan for each emissions unit as an attachment to the application. See the District CAM plan instructions for more detail.

If you answer yes to any of questions 16 through 18 below, submit supplemental information as an attachment to the application. See instructions for more detail.

16. Does this application request alternative operating scenarios pursuant to Rule 33.4.B? ☐ Yes ☒ No

17. Does this application request voluntary emission caps pursuant to Rule 33.4.C? ☐ Yes ☒ No

18. Does this application include any proposed exemptions from otherwise applicable requirements pursuant to Rule 33.2.A.5? ☐ Yes ☒ No

Miscellaneous Federal Requirements

19. Has this facility been required to prepare a federal Risk Management Plan pursuant to Section 112(r) of the federal Clean Air Act and 40 CFR Part 68? ☐ Yes ☒ No

If yes, has the federal Risk Management Plan been submitted to the implementing agency? ☐ Yes ☐ No

If a federal Risk Management Plan is required but has not been submitted to the implementing agency, provide a detailed explanation as an attachment to the application.

20. Does this facility conduct any activities that are regulated by the federal protection of stratospheric ozone requirements in 40 CFR Part 82? ☒ Yes ☐ No

21. Is this facility subject to the acid rain requirements in 40 CFR Part 72 through 40 CFR Part 78? ☐ Yes ☒ No

22. Is this facility subject to the federal outer continental shelf air regulations in 40 CFR Part 55? ☐ Yes ☒ No

Permit Shields

23. Does the current Part 70 permit for this facility include any permit shields? ☒ Yes ☐ No

If yes, is the basis for each permit shield still correct? ☒ Yes ☐ No

If the current Part 70 permit contains any permit shield for which the basis is no longer correct, provide a detailed explanation as an attachment to the application.

New Generally Applicable Requirement

24. Rule 74.11.1 requires that new large water heaters and new small boilers with a rated heat input capacity greater than or equal to 75,000 BTU per hour and less than or equal to 2,000,000 BTU per hour be certified by the manufacturer to meet certain nitrogen oxide emission standards. Are you complying with the requirements of Rule 74.11.1 by purchasing and installing only certified units? ☒ Yes ☐ No

If no, provide a detailed explanation as an attachment to the application.

Facilities Must Submit Process Descriptions, Plot Plans, and Process Flow Diagrams That Provide the Following:

See Renewal Application

25. General Nature of Business (e.g., Autobody Painting, Gasoline Storage & Dispensing, Oil Production, etc.)

See Renewal Application

26. Facility Process Description

See Appendix D

27. A Street Map or Road Map That Shows the Location of the Facility in Ventura County.

See Appendix D

28. A Facility Map That Clearly Indicates the Facility Boundaries and the Location of Permitted Equipment.

See Appendix C

29. A Process Flow Diagram That Traces the Processes Throughout All Permitted Equipment from Start to Finish.

30. Certification by Responsible Official (as defined in 40 CFR 70.2 and VCAPCD Rule 33.1)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information provided for this Part 70 Permit Application are true, accurate, and complete.

Signature and Title of Responsible Official:

Date:

 DISTRICT MANAGER

08-18-12

General Facility Information (May 22, 2002)



Compliance Plan Cover Sheet
Part 70 Permit Reissuance Applications Forms

Instructions

A compliance plan, signed by the responsible official, must be attached to each application for reissuance of a Part 70 Permit. To complete the compliance plan, attach the following to this sheet:


1. A completed compliance plan form for all applicable requirements that are currently effective and that apply to an emission unit at your facility or to your entire facility. Only one form that refers to all currently applicable requirements needs to be completed.
2. A completed compliance plan form for each applicable requirement that will become effective during the term of your permit and that will apply to an emission unit at your facility or to your entire facility. One form for each applicable requirement with a future effective date must be completed.
3. A narrative description of how each emission unit at your facility that does not comply with an applicable requirement will achieve compliance with the requirement.

A compliance schedule, approved as part of an order issued by the District Hearing Board, must be attached for each emission unit that is not in compliance with an applicable requirement. Each compliance schedule shall contain a schedule of remedial measures, including an enforceable sequence of actions with milestones, leading to compliance with the applicable requirement. The compliance schedule shall resemble, and be at least as stringent as that contained in any judicial consent decree or administrative order to which the source is subject.

A schedule for submission of certified progress reports on the compliance schedule no less frequently than every six months must also be attached.

Certification by Responsible Official

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this compliance plan are true, accurate, and complete.

Signature and Title of Responsible Official:  DISTRICT MAN	Date: 06-18-12
--	-------------------

Compliance Plan Cover Sheet (May 22, 2002)



<p align="center">Compliance Plan Applicable Requirements That Are Currently Effective</p>
--

Compliance Schedule

Except for the specific applicable requirements and emission units listed below, the facility that is the subject of this application complies with all currently applicable requirements and will continue to comply with all currently applicable requirements.

Exceptions to This Declaration

Applicable Requirement	Emission Unit
None	

Compliance Plan Currently Effective (May 22, 2002)



Compliance Plan
Applicable Requirements With a Future Effective Date

Applicable Requirement

40 CFR PART 63 SUBPART ZZZZ (RICE MACT)
IS A FUTURE EFFECTIVE REQUIREMENT
APPLICATION TEXT SITES RULE AND
STAGES COMPLIANCE PLAN

Citation:

None

Description:

For
10/19/13
JIT
11/1/13

Compliance Schedule

The requirement cited and described will be applicable to my entire facility or to emission units at my facility.

Except for the specific emission units listed below, the facility that is the subject of this application will comply in a timely manner with the applicable requirement listed above and in accordance with the compliance schedule, if any, contained in the applicable requirement.

Exceptions to This Declaration

Emission Unit

Compliance Plan Future Effective (May 22, 2002)

Permit No. 01395__

Compliance Plan Page __ of 3

APPENDIX B

INSIGNIFICANT ACTIVITIES LIST

Ventura County Air Pollution Control District
INSIGNIFICANT ACTIVITIES (EXEMPT EQUIPMENT)
 Part 70 Permit No. 01395

INSIGNIFICANT ACTIVITIES (EXEMPT EMISSION UNITS)	BASIS FOR EXEMPTION (Size/Production Rate)	RULE 23 CITATION
Architectural Coatings	Repair and Maintenance	Rule 23.F.7
Architectural Coatings	Janitorial	Rule 23.F.8
Architectural Coatings	Non-refillable Aerosol	Rule 23.F.11.a
2 - Air Compressors	<50 HP	Rule 23.D.6
3 - Pumps	<50 HP	Rule 23.D.6
2 - 5 Lighttowers	<50 HP	Rule 23.D.6
Solvent Cleaners	Cold Cleaner	Rule 23.F.10.c
General Use Aerosol Spray Paints	Non-refillable Aerosol	Rule 23.F.11.a
Leachate Tanks	Untreated leachate holding tank < 550 gallons	Rule 23.F.21
Leachate Tanks	Leachate storage tank	Rule 23.F.21
1 - 500 Gal Above Ground Gasoline Storage Tank	Tank < 550 gallons and not required to have VR	Rule 23.F.1
1 - 500 Gal Above Ground Diesel Storage Tank	Diesel Fuel	Rule 23.F.21
1 - 15,000 Gallon 550 Underground Diesel Storage Tank	Diesel Fuel	Rule 23.F.21
4 - 240 Gallon Above Ground New Oil Storage Tanks	Oil	Rule 23.F.21
1 - 495 Gallon Above Ground Waste Oil Storage Tanks	Oil	Rule 23.F.21

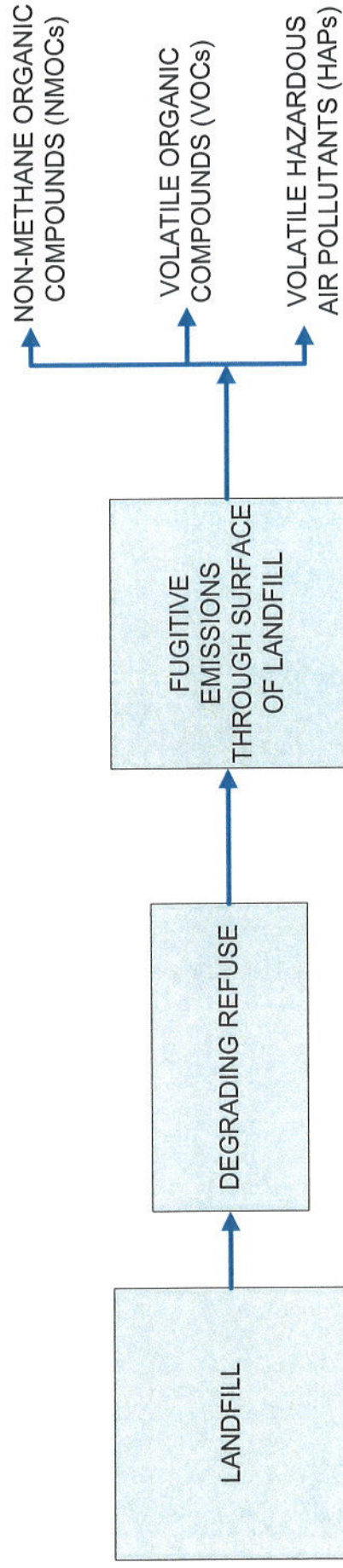
←	Steam cleaner/pressure washer, Steam Cleaning, Rule 23.C.2
←	2 - 85 Gallon Above Ground New Oil Tanks, Oil, Rule 23.F.21
←	2 - 100 Gallon Above Ground Used Oil Tanks, Oil, Rule 23.F.21
←	2 - 130 Gallon Above Ground New Oil Tanks, Oil, Rule 23.F.21

Section No. 5

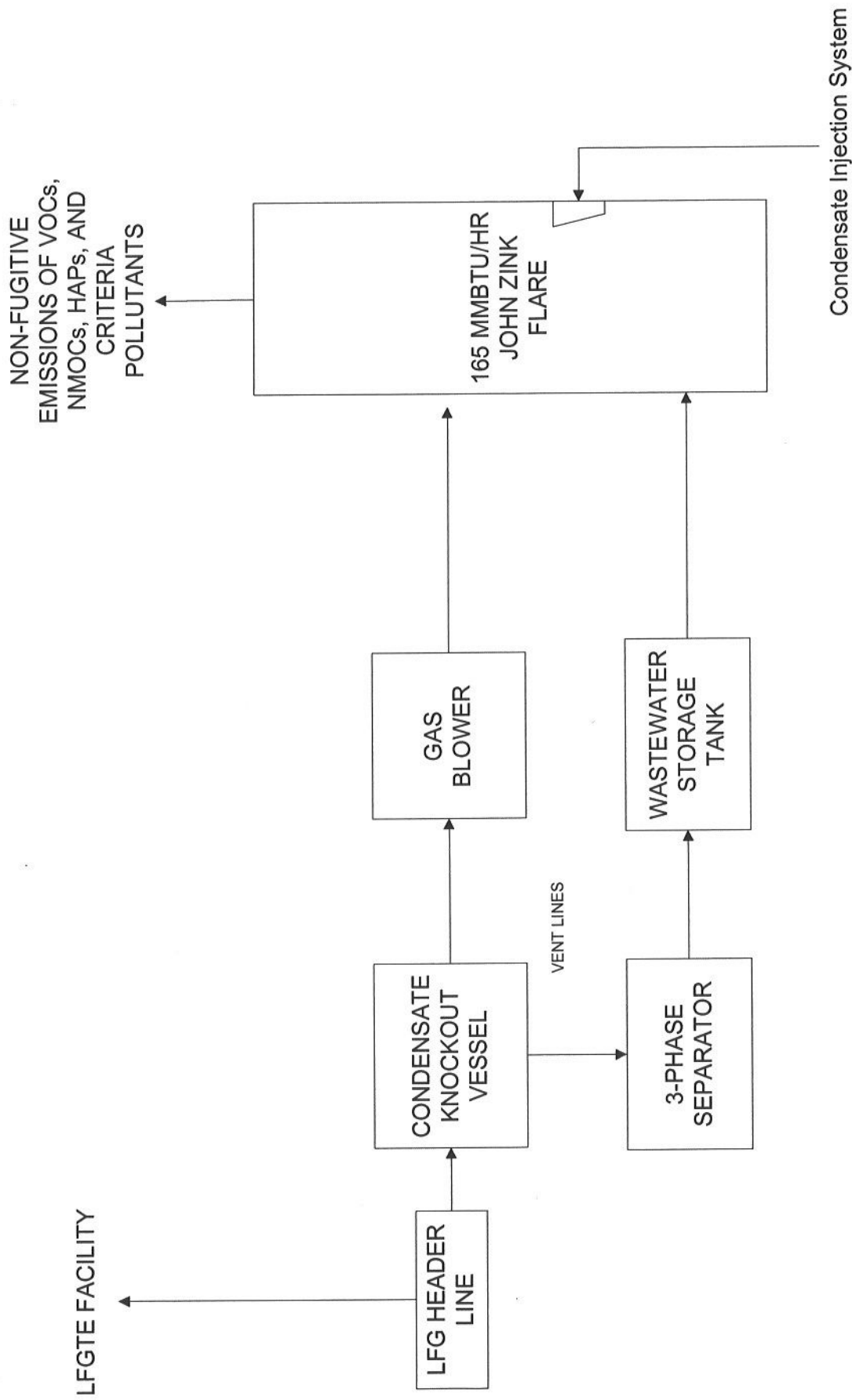
Insignificant Activities Table 01395

APPENDIX C

PROCESS FLOW DIAGRAMS



PROCESS FLOW DIAGRAM OF FUGITIVE LANDFILL GAS FROM LANDFILL



PROCESS FLOW DIAGRAM OF LANDFILL GAS COLLECTION AND CONTROL SYSTEM (FLARE STATION)

PROCESS FLOW DIAGRAM OF LFGTE FACILITY

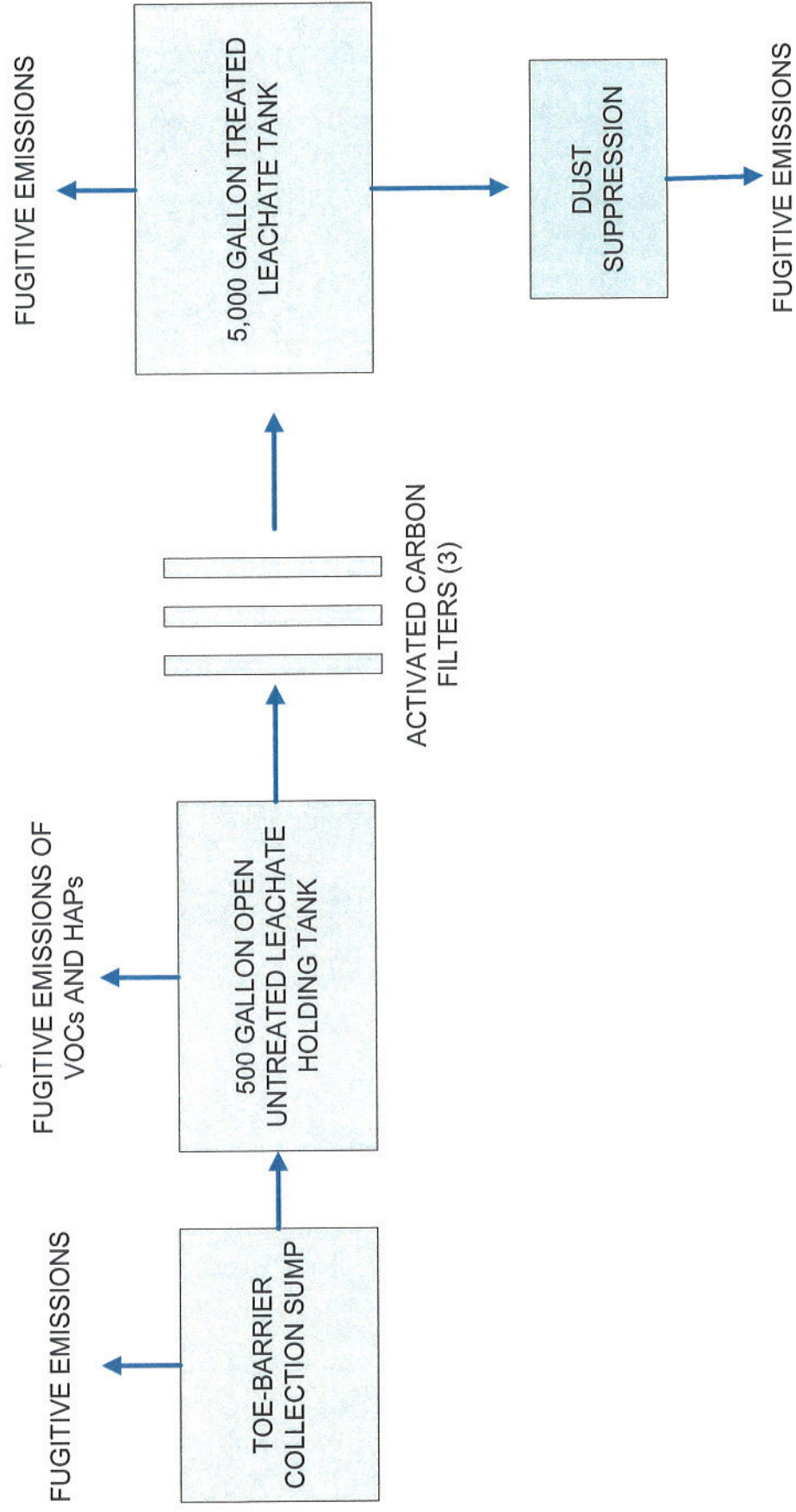
The diagram illustrates the process flow of an LFGTE facility. It begins with 'LFG FROM HEADER AT FLARE STATION' entering an 'Inlet Separator'. From there, the flow goes to 'Inlet Filter (1)', then through a 'Liquid Drainer' and a 'T, P' gauge to a 'Compressor (40 HP blower)'. The compressed gas then passes through 'Heat Exchanger (HX1)', another 'T, P' gauge, and 'Heat Exchanger (HX2)'. It then goes to 'Inlet Filter (2)', a 'T, P' gauge, and finally to 'Engine (2) 1,877 BHP each'. The engines produce 'NON-FUGITIVE EMISSIONS OF VOCs, NMOCS, HAPS AND CRITERIA POLLUTANTS'. The exhaust from the engines goes back to 'Heat Exchanger (HX2)', then through 'Heat Exchanger (HX1)', a 'T, P' gauge, and a 'Liquids/Vapor Separator'. The separator's output goes to a '1 HP Pump', which then feeds into a 'Chiller'. The chiller's output goes to a 'Coolant In' line with a 'T, P' gauge. This line then splits: one path goes to 'Heat Exchanger (HX1)', and the other goes to 'Heat Exchanger (HX2)'. The return lines from both heat exchangers merge and go to a 'Coolant Return' line. The 'Cold Condensate' line from the 'Compressor' goes through a 'Liquid Drainer', a 'T, P' gauge, and a 'Condensate Pump (1/2 HP)' to a 'Condensate Tank'.

Legend:

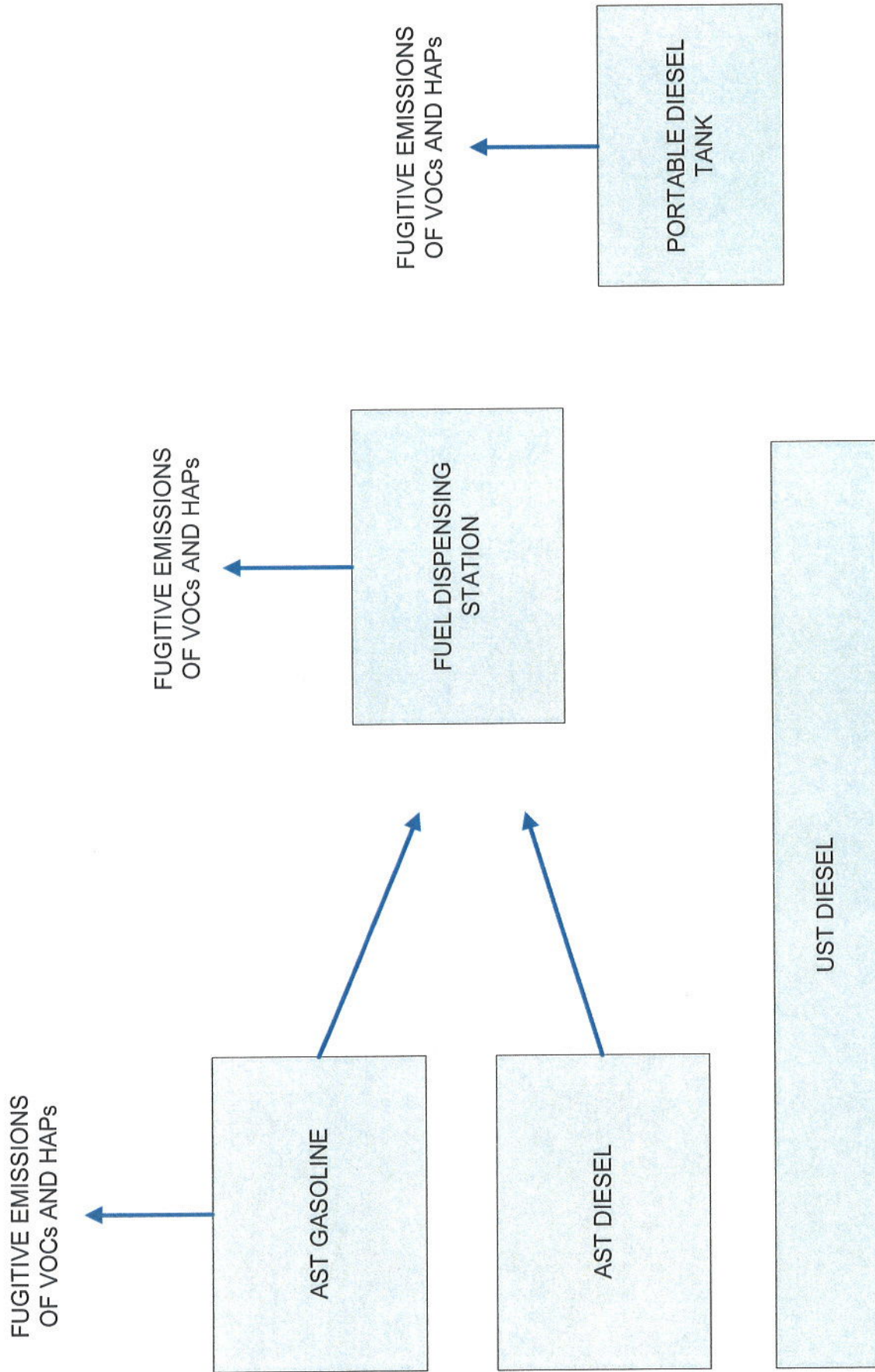
- T = Temperature Gauge
- P = Pressure Gauge
- Red arrow = LFG flow
- Blue arrow = Coolant/Condensate Flow

T = Temperature Gauge = LFG flow

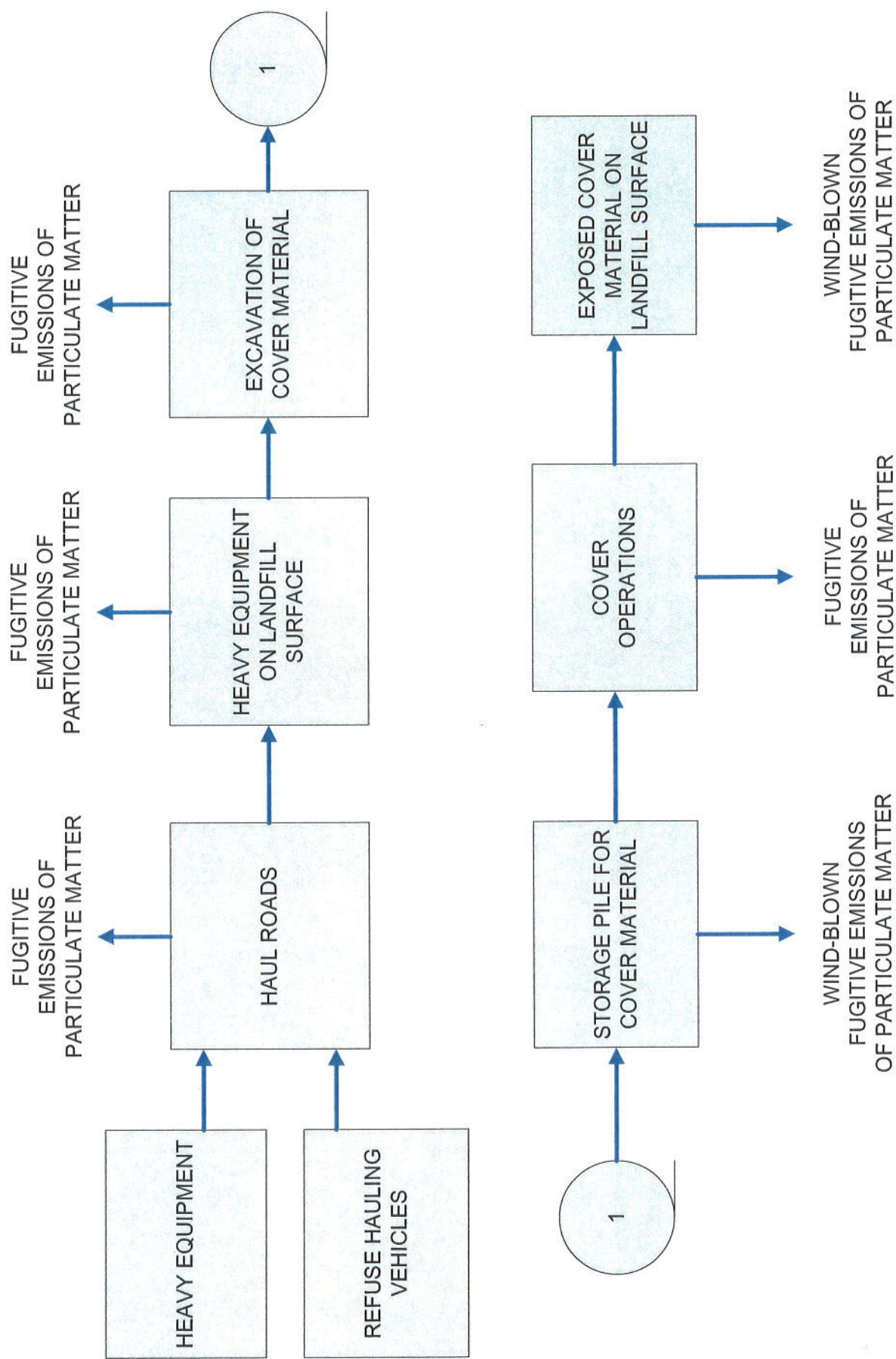
P = Pressure Gauge → = Coolant/Condensate Flow



PROCESS FLOW DIAGRAM FOR LEACHATE TREATMENT SYSTEM

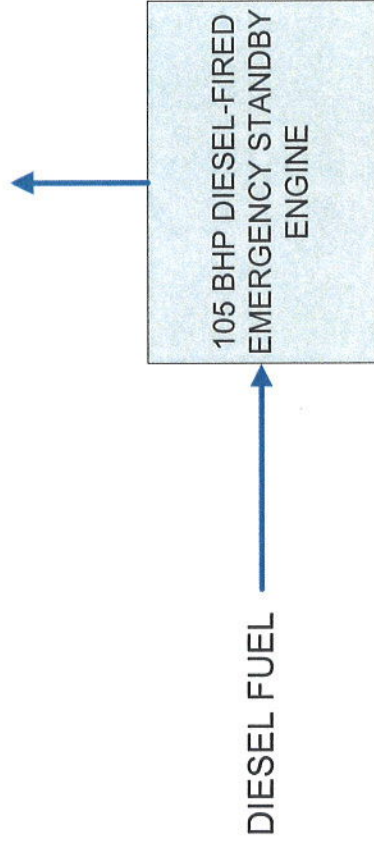


PROCESS FLOW DIAGRAM FOR FUEL STORAGE TANKS AND DISPENSING STATIONS



PROCESS FLOW DIAGRAM FOR VEHICLES AND EQUIPMENT TRAVEL ON HAUL ROADS AND LANDFILL COVER OPERATIONS

NON-FUGITIVE EMISSIONS
OF VOCs AND
CRITERIA POLLUTANTS



PROCESS FLOW DIAGRAM OF EMERGENCY STANDBY ENGINE

APPENDIX E

TABLES FROM CURRENT TITLE 70 PERMIT

1. PERIODIC MONITORING SUMMARY

This periodic monitoring summary is intended to aid the permittee in quickly identifying key monitoring, recordkeeping, and reporting requirements. It is not intended to be used as a "stand alone" monitoring guidance document that completely satisfies the requirements specifically applicable to this facility. The following tables are included in the periodic monitoring summary:

- Table 1.a - Specific Applicable Requirements
- Table 1.b - Permit-Specific Conditions
- Table 1.c - General Applicable Requirements
- Table 1.d - General Requirements for Short-Term Activities

1a. Specific Applicable Requirements

The Specific Applicable Requirements Table includes a summary of the monitoring requirements, recordkeeping requirements, reporting requirements, and test methods associated with the attachments contained in Section No. 6 of this permit.

Attachment No./Condition No.	Applicable Rule or Requirement	Monitoring	Recordkeeping	Semi-annual Reports	Test Methods	Comments
74.6	Rule 74.6	<ul style="list-style-type: none"> • Annual compliance certification • Maintain current solvent information • Routine surveillance of solvent cleaning activities • Upon request, solvent testing • Measurement of freeboard height and drain hole area for cold cleaners 	<ul style="list-style-type: none"> • Records of current solvent information 	None	<ul style="list-style-type: none"> • ROC content - EPA Test Method 24 • Identity of solvent components: ASTM E168-67, ASTM E169-87, or ASTM E260-85 • True vapor pressure or composite vapor pressure: ASTM D2879-86 or other methods per Rule 74.6.G.5 • Initial boiling point: ASTM 1078-78 or published source • Spray gun active/passive solvent losses: SCAQMD Method (10-3-89) 	
74.9N7	Rule 74.9.D.3	<ul style="list-style-type: none"> • Hours of Operation • Annual compliance certification 	<ul style="list-style-type: none"> • Records of operating hours • Date, time, duration, and reason for emergency operation • Records of engine data 	None	None	
ATCM Engine N2	ATCM for Stationary Compression Ignition Engines	<ul style="list-style-type: none"> • Hours of operation records for maintenance and testing • Fuel type records 	<ul style="list-style-type: none"> • Hours of operation records for maintenance and testing • Fuel type records 	None	None	Not federally enforceable

1a. Specific Applicable Requirements (continued)

Attachment No./ Condition No.	Applicable Rule or Requirement	Monitoring	Recordkeeping	Semi-annual Reports	Test Methods	Comments
74.17.1-1395	Rule 74.17.1	<ul style="list-style-type: none"> • Annual compliance certification • Monitor flare gas flow rate and flare temp • Monitor engine operating parameters • Monitor wells and collection header (temperature, pressure, nitrogen, oxygen) • Monitor methane concentration at the surface of the landfill • Source test flare every 2 years (NMOC, NOx, and CO) 	<ul style="list-style-type: none"> • Records of waste in place and annual waste acceptance rate • Records of flare testing • Records of flare temperature and landfill gas flow to the flare • Records of well monitoring • Documentation of HOV wells • Records of existing wells, newly installed wells, and planned wells • Records of methane concentration at the landfill surface • Records of asbestos-containing or non-degradable waste • Records of exceedances • Records of SSM plan 	<ul style="list-style-type: none"> • Reports of exceedances • Reports of HOV documentation • Reports of new wells 	<ul style="list-style-type: none"> • NMOC-EPA Test Method 25, 25C, or 18; or SCAQMD Method 25.3 • NOx – EPA Method 7 • CO – EPA Method 10 • Calorific value – ASTM Method D1826-77 • O2 – EPA Method 3A or direct LFG monitor • Exhaust Flow – F Factor EPA Method 19 • Surface Methane – EPA Method 21 	
40CFR63AAAA	40 CFR Part 63, Subpart AAAAA	<ul style="list-style-type: none"> • Annual compliance certification • Comply with 40 CFR Part 60, Subpart Cc • Develop a startup, shutdown, malfunction (SSM) plan 		<ul style="list-style-type: none"> • SSM plan reports 	•	

1b. Permit-Specific Conditions

The Permit-Specific Conditions Table includes a summary of the monitoring requirements, recordkeeping requirements, reporting requirements, and test methods associated with the attachments contained in Section No. 7 of this permit.

Attachment No./Condition No.	Applicable Rule or Requirement	Monitoring	Recordkeeping	Semi-annual Reports	Test Methods	Comments
PO1395PC1 - Condition Nos. 1, 2, and 3	Rule 26 General Recordkeeping	<ul style="list-style-type: none"> • Annual compliance certification • Monthly records of throughput and consumption 	<ul style="list-style-type: none"> • Monthly records of throughput and consumption 	None	None	
PO1395PC1 - Condition No. 4	Rule 29 Solvent Use	<ul style="list-style-type: none"> • Monthly records of solvents used in the cold cleaner(s) 	<ul style="list-style-type: none"> • Monthly records of solvents used in the cold cleaner(s) 	None	None	
PO1395PC2 - Condition Nos. 1, 2, and 3	Rule 26 Flare BACT and Rule 74.17.1 Limits	<ul style="list-style-type: none"> • Annual compliance certification • Flare temperature • Testing every 2 years 	<ul style="list-style-type: none"> • Records of flare temperature • Records of source tests 	None	<ul style="list-style-type: none"> • ROC - EPA Method 25 or 18 • NOx - EPA Method 7 • Sulfur Compounds - EPA Method 6, 6A, 6C, 8, 15, 16A, 16B, or SCAQMD Method 307-94, as appropriate 	
PO1395PC2 - Condition Nos. 4 and 5	Rule 26 LFG sulfur content	<ul style="list-style-type: none"> • Annual compliance certification • Monthly lfg sulfur content analysis 	<ul style="list-style-type: none"> • Records of lfg sulfur content 	None	<ul style="list-style-type: none"> • Sulfur Compounds - H2S detector tubes, SCAQMD Method 307-94, or EPA Method 16 	
PO1395PC2 - Condition No. 6	Rule 54	<ul style="list-style-type: none"> • Annual compliance certification • Source test every 4 years • Modeling upon request 	<ul style="list-style-type: none"> • Records of source tests 	None	<ul style="list-style-type: none"> • Sulfur Compounds - EPA Method 6, 6A, 6C, 8, 15, 16A, 16B, or SCAQMD Method 307-94, as appropriate 	
PO1395PC2 - Condition No. 7	Rule 57.1	<ul style="list-style-type: none"> • Annual compliance certification 	<ul style="list-style-type: none"> • Records of source tests 	None		Not required based on District EPA emission factor analysis

1b. Permit-Specific Conditions (Continued)

Attachment No./ Condition No.	Applicable Rule or Requirement	Monitoring	Recordkeeping	Semi-annual Reports	Test Methods	Comments
PO1395PC2 - Condition No. 8	Rule 26 and 74.17.1 Calibration Requirements	•Annual compliance certification •Calibration records	•Records of calibration and function checks	None	None	
PO1395PC2 - Condition No. 9	Rule 26 Collection Vessel Emission Requirements	•Annual compliance certification	•None	None	None	
PO1395PC2 - Condition No. 10	Rule 26 Collection Vessel Vacuum Requirements	•Annual compliance certification	•None	None	None	
PO1395PC2 - Condition No. 11	Rule 26 Well Locations	•Annual compliance certification	•None	None	None	
PO1395PC2 - Condition Nos. 12 and 13	Rule 51 Toxics Testing and HRA Requirements	•Source testing	•Records of source tests	None	APCD approved test protocol	District enforceable only
PO1395PC3- Condition Nos. 1, 3, 4, 5, 6, 7, 8	Rules 26, 35, 74.9 Engine Emission Limits	•Annual compliance certification •Biennial source testing •Quarterly emission screening •Operator inspection plan •Emission inspections •Engine identification	•Records of source tests •Records of quarterly screenings •Engine identification •Records of engine emission inspections •Records of corrective action	•Records of source tests •Engine data •Annual usage •Summary of maintenance and testing reports	•ROC-EPA Test Method 25 or 18 •NOx - ARB Method 100 •CO - ARB Method 100 •O2 - ARB Method 100	
PO1395PC3- Condition Nos. 2, 3, 4	Rule 54	•Annual compliance certification •Annual source test •Modeling upon request	•Records of source tests	None	Sulfur Compounds - EPA Test Method 6, 6A, 6C, 8, 15, 16A, 16B, or SCAQMD Method 307- 94, as appropriate	
PO1395PC4	Rule 29 Out of Service Emissions Units	•Annual Compliance Certification	None	None	None	

1c. General Applicable Requirements

The General Applicable Requirements Table includes a summary of the monitoring requirements, recordkeeping requirements, reporting requirements, and test methods associated with the attachments contained in Section No. 8 of this permit.

Attachment No./ Condition No.	Applicable Rule or Requirement	Monitoring	Recordkeeping	Semi-annual Reports	Test Methods	Comments
50	Rule 50	<ul style="list-style-type: none"> • Routine surveillance • Visual inspections • Annual compliance certification, including a formal survey • Opacity readings upon request • Notification required for uncorrectable visible emissions 	<ul style="list-style-type: none"> • All occurrences of visible emissions for periods > 3 min in any one hour • Annual formal survey of all emissions units 	None	• Opacity - EPA Method 9	
54.B.1	Rule 54.B.1	<ul style="list-style-type: none"> • Annual compliance certification • Follow monitoring requirements under Rule 64 • Upon request, source test for sulfur compounds at point of discharge 	None	None	<ul style="list-style-type: none"> • Sulfur Compounds - EPA Test Method 6, 6A, 6C, 8, 15, 16A, 16B, or SCAQMD Method 307-94, as appropriate 	• Compliance with Rule 64 ensures compliance with this rule based on District analysis
54.B.2	Rule 54.B.2	<ul style="list-style-type: none"> • Annual compliance certification • Determine ground or sea level concentrations of SO₂, upon request 	<ul style="list-style-type: none"> • Representative fuel analysis or exhaust analysis and compliance demonstration 	None	<ul style="list-style-type: none"> • SO₂ - BAAQMD Manual of Procedures, Vol. VI, Section 1, Ground Level Monitoring for H₂S and SO₂ 	
57.1	Rule 57.1	<ul style="list-style-type: none"> • Annual compliance certification 	None	None	CARB Method 5	• Not required based on District analysis
64.B.1	Rule 64.B.1	<ul style="list-style-type: none"> • Annual compliance certification • None for PUC-quality gas, propane, or butane • Annual test if gas is other than PUC-quality gas, propane, or butane (submit with annual compliance certification) 	<ul style="list-style-type: none"> • Annual fuel gas analysis if gas is other than PUC-quality gas, propane, or butane 	None	• SCAQMD Method 307-94	

1c. General Applicable Requirements (Continued)

Attachment No./ Condition No.	Applicable Rule or Requirement	Monitoring	Recordkeeping	Semi-annual Reports	Test Methods	Comments
64.B.2	Rule 64.B.2	<ul style="list-style-type: none"> Annual compliance certification Fuel supplier's certification, or fuel test per each delivery (submit with annual compliance certification) 	<ul style="list-style-type: none"> Fuel supplier's certification, or fuel test per each delivery 	None	<ul style="list-style-type: none"> ASTM Method D4294-83 or D2622-87 	
74.6	Rule 74.6	<ul style="list-style-type: none"> Annual compliance certification Maintain current solvent information Routine surveillance of solvent cleaning activities Upon request, solvent testing Measurement of freeboard height and drain hole area for cold cleaners 	<ul style="list-style-type: none"> Records of current solvent information 	None	<ul style="list-style-type: none"> ROC content – EPA Test Method 24 Identity of solvent components: ASTM E168-67, ASTM E169-87, or ASTM E260-85 True vapor pressure or composite vapor pressure: ASTM D2879-86 or other methods per Rule 74.6.G.5 Initial boiling point: ASTM 1078-78 or published source Spray gun active/passive solvent losses: SCAQMD Method (10-3-89) 	
74.11.1	Rule 74.11.1	<ul style="list-style-type: none"> Annual compliance certification Maintain identification records of large water heaters and small boilers 	<ul style="list-style-type: none"> Records of current information of large water heaters and small boilers 	None	None	<ul style="list-style-type: none"> Rule only applies to future installation of large water heaters and small boilers
74.22	Rule 74.22	<ul style="list-style-type: none"> Annual compliance certification Maintain furnace identification records 	<ul style="list-style-type: none"> Records of current furnace information 	None	None	<ul style="list-style-type: none"> Rule only applies to future installation of natural gas-fired, fan-type furnaces

1d. General Requirements for Short-Term Activities

The General Requirements for Short-term Activities Table includes a summary of the monitoring requirements, recordkeeping requirements, reporting requirements, and test methods associated with the attachments contained in Section No. 9 of this permit.

Attachment No./ Condition No.	Applicable Rule or Requirement	Monitoring	Recordkeeping	Semi-annual Reports	Test Methods	Comments
74.1	Rule 74.1	<ul style="list-style-type: none"> Annual compliance certification Routine surveillance and visual inspections of abrasive blasting operation Abrasive blasting records 	<ul style="list-style-type: none"> Abrasive blasting records 	None	<ul style="list-style-type: none"> Visible emission evaluation- Section 92400 of CCR 	
74.2	Rule 74.2	<ul style="list-style-type: none"> Annual compliance certification Routine surveillance Maintain VOC records of coatings used 	<ul style="list-style-type: none"> Maintain VOC records of coatings used 	None	<ul style="list-style-type: none"> Rule 74.2.G 	
74.4.D	Rule 74.4.D	<ul style="list-style-type: none"> Annual compliance certification Test ROC content of oil sample being proposed for usage 	<ul style="list-style-type: none"> Records of oil analyses 	None	<ul style="list-style-type: none"> ASTM D402 	
74.28	Rule 74.28	<ul style="list-style-type: none"> Annual compliance to ensure proper vapor control during roofing kettle operation 	None	None	None	
74.29	Rule 74.29	<ul style="list-style-type: none"> Annual compliance certification Date and quantity of soil disturbed Routine surveillance Notification required for excavation 	<ul style="list-style-type: none"> Date and quantity of soil disturbed 	None	<ul style="list-style-type: none"> Vapor concentration- EPA Method 21 Wt. % of contaminant in soil-EPA Method 8015B 	
40CFR.61.M	40 CFR Part 61, Subpart M	<ul style="list-style-type: none"> Annual compliance certification See 40 CFR Part 61.145 for inspection procedures 	<ul style="list-style-type: none"> See 40 CFR Part 61.145 for recordkeeping procedures 	<ul style="list-style-type: none"> See 40 CFR Part 61.145 for notification procedures 	<ul style="list-style-type: none"> See 40 CFR Part 61.145 for test methods 	

M:\TITLE\TV Permits\Pol395\Permit II\perdcTbI-rev271.doc

TABLE NO. 2

VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT Part 70 Permit No. 01395 Permitted Equipment and Applicable Requirements						
<small>M:\TITLE\TV Permits\PO1395\PERMIT I\Tables1395-271</small> Equipment	Permit Specific Conditions	Rule 74.6	Rule 74.9	ATCM Engine	Rule 74.17.1 (40 CFR Part 60 Cc & WWW)	40 CFR Part 63 AAAA
1 - Landfill Gas Collection and Control System consisting of: 1 - 165 MMBTU/Hr John Zink Landfill Gas Flare, Model Zule 2 - 1,877 BHP Deutz Landfill Gas-Fired Lean Burn IC Engines, Model No. TBG 620 V16K, turbocharged and aftercooled, 17.5 MMBTU/hr maximum heat input, associated 1.35 MW electrical generator 1 - 1,500 gal HC condensate tank with vent line connected to LFGCS 1 - 10,000 gal waste water tank with vent line to the LFGCS Condensate injection system Electric powered gas blower(s) 1 - 44 MMBTU/Hr McGill Environmental Systems Landfill Gas Flare, Out of Service 1 - 75 MMBTU/Hr John Zink (Model ZTOF) Landfill Gas Flare, Out of Service Exempt Equipment Cold Cleaner (Exempt - Rule 23.F.c)	PC1, PC2 PC1, PC3 PC1, PC2 PC1, PC2 PC4 PC4		X 7	2	X X X X	X

TABLE NO. 3

VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT			
Part 70 Permit No. 01395			
Permitted Throughput/Consumption Limits			
Equipment	Throughput Permit Limit	District (D)/ Federal (F) Enforceable	Calculation Throughput
<p>1 - Landfill Gas Collection and Control System consisting of:</p> <p>1 - 165 MMBTU/Hr John Zink Landfill Gas Flare, Model Zule</p> <p>2 - 1,877 BHP Deutz Landfill Gas-Fired Lean Burn IC Engines, Model No. TBG 620 V16K, turbocharged and aftercooled, 17.5 MMBTU/hr maximum heat input, associated 1.35 MW electrical generator</p> <p>1 - 1,500 gal HC condensate tank with vent line connected to LFGCS</p> <p>1 - 10,000 gal waste water tank with vent line to the LFGCS Condensate injection system Electric powered gas blower(s)</p> <p>1 - 44 MMBTU/Hr McGill Environmental Systems Landfill Gas Flare, Out of Service</p> <p>1 - 75 MMBTU/Hr John Zink (Model ZTOF) Landfill Gas Flare, Out of Service</p> <p>1 - 105 BHP Caterpillar Diesel-Fired Emergency Standby Engine, Model 3304D1, Serial No. 83Z03236, I.D. No. 900235</p> <p>Exempt Equipment</p> <p>Cold Cleaner (Exempt - Rule 23.F.c)</p>	<p>1,489,200 MMBTU/yr combined limit for flare and two engines</p> <p>306,600 MMBTU/yr⁴</p> <p>20 hr/yr³</p>	<p>F</p> <p>D</p>	<p>1,182,600 MMBTU/yr¹</p> <p>153,300 MMBTU/yr per engine (8760 hr/yr)</p> <p>20 hr/yr</p>
<p>Notes:</p> <p>1) The permitted emissions for the flare are calculated at 1,182,600 MMBTU/yr</p> <p>2) The combined use of the flare and the two engines shall not exceed 1,489,200 MMBTU/yr. The combined use of the two engines shall not exceed 306,600 MMBTU/yr.</p> <p>3) Limit is for maintenance and testing purposes only. Emergency use is unlimited.</p>			

TABLE NO. 4

VENTURA COUNTY AIR POLLUTION CONTROL DISTRICT										
Part 70 Permit No. 01395										
Permitted Emissions										
M:\TITLE\TV Permits\PO1395\PERMIT IRTables\1395-271 Equipment	TONS PER YEAR					POUNDS PER HOUR				
	ROC	NOx	PM	SOx	CO	ROC	NOx	PM	SOx	CO
1 - Landfill Gas Collection and Control System consisting of:										
1 - 165 MMBTU/Hr John Zink Landfill Gas Flare, Model Zule	17.74	14.78	9.46	11.83	118.26	4.95	4.13	2.64	3.30	33.00
2 - 1,877 BHP Deutz Landfill Gas-Fired Lean Burn IC Engines, Model No. TBG 620 V16K, turbocharged and aftercooled, 17.5 MMBTU/hr maximum heat input, associated 1.35 MW electrical generator	5.98	21.75	3.37	3.07	105.32	1.37	4.97	0.77	0.70	24.05
1 - 1,500 gal HC condensate tank with vent line connected to LFGCS	0.02					<0.01				
1 - 10,000 gal waste water tank with vent line to the LFGCS Condensate injection system Electric powered gas blower(s)	0.07					0.01				
1 - 44 MMBTU/Hr McGill Environmental Systems Landfill Gas Flare, Out of Service										
1 - 75 MMBTU/Hr John Zink (Model ZTOF) Landfill Gas Flare, Out of Service										
1 - 105 BHP Caterpillar Diesel-Fired Emergency Standby Engine, Model 3304D1, Serial No. 83Z03236, I.D. No. 900235	<0.01	0.03	<0.01	<0.01	0.01	0.02	0.35	0.02	0.01	0.08
Exempt Equipment										
Cold Cleaner (Exempt - Rule 23.F.c)										
 * - Included in Emissions Above										
HAP Emissions Reference: AB 2588 Air Toxics Report Submittal Date: 05-08-95										
Total Permitted Emissions	23.81	36.56	12.83	14.90	223.59	6.35	9.45	3.43	4.01	57.13

APPENDIX F
VCAPCD EMISSIONS

Equipment and Emissions Summary

01395 - 271 Simi Valley Landfill

Permit Period: 1/1/2012 to 12/31/2012

SIC Code 4953 - Landfills/Incinerators

DEVICE NO: 20500 1 - 165 MMBTU/hr

John Zink Landfill Gas Flare (5,500 scfm at 500 BTU/cf), Type: Ultra Low Emission, Model: Zule, size: 13' diameter x 60' height, shrouded, enclosed, ground level.

SOURCE CLASSIFICATION CODE		SCC Units		Prmt Annual Throughput		Max Hourly Throughput			Hours Per Year (if used)	
10201303 - Flare-MMBTU		MMBTU		182600.0000 MMBTU		165.0000 MMBTU				
POLLUTANT	Tons/Yr	Lbs/Hr	Uncntl EF	Cntl Factor	Cntl EF	APE?	HPE?	EF Over	CF Over	Control Device
Reactive Organics	17.74	4.95	0.0300	1.0000	0.0300	Y	Y	Y		
Nitrogen Oxides	14.78	4.13	0.0250	1.0000	0.0250	Y	Y	Y		
Particulate Matter	9.46	2.64	0.0160	1.0000	0.0160	Y	Y	Y		
Sulfur Oxides	11.83	3.30	0.0200	1.0000	0.0200	Y	Y	Y		
Carbon Monoxide	118.26	33.00	0.2000	1.0000	0.2000	Y	Y	Y		

DEVICE NO: 16629 2 - 1877 BHP

Deutz Landfill Gas Fired Engines, Lean Burn, Model TBG 620 V16K, generating 1.35 MW each

SOURCE CLASSIFICATION CODE	SCC Units		Prmt Annual Throughput		Max Hourly Throughput			Hours Per Year (if used)		
20500206 - NG ICE>=1000 BHP-lb/M	MMBTU		153300.0000 MMBTU		17.5000 MMBTU			Calculate Annual Using 8760 Hrs/Yr		
JLLUTANT	Tons/Yr	Lbs/Hr	Uncntl EF	Cntl Factor	Cntl EF	APE?	HPE?	EF Over	CF Over	Control Device
Reactive Organics	5.98	1.37	0.0390	1.0000	0.0390	Y	Y	Y		
Nitrogen Oxides	21.75	4.97	0.1419	1.0000	0.1419	Y	Y	Y		
Particulate Matter	3.37	0.77	0.0220	1.0000	0.0220	Y	Y	Y		
Sulfur Oxides	3.07	0.70	0.0200	1.0000	0.0200	Y	Y	Y		
Carbon Monoxide	105.32	24.05	0.6870	1.0000	0.6870	Y	Y	Y		

DEVICE NO: 14587 1 - 1500 Gallon

Hydrocarbon Condensate Storage Tank, with vent line connected to the Landfill Gas Collection System

SOURCE CLASSIFICATION CODE		SCC Units		Prmt Annual Throughput		Max Hourly Throughput			Hours Per Year (if used)	
50182599 - Landfill Condensate Tanks		Year		1.0000 Year		0.0001 Year			Calculate Hourly Using 8760 Hrs/Yr	
POLLUTANT	Tons/Yr	Lbs/Hr	Uncntl EF	Cntl Factor	Cntl EF	APE?	HPE?	EF Over	CF Over	Control Device
Reactive Organics	0.02	0.00	38.1200	1.0000	38.1200	Y	Y	Y		

Equipment and Emissions Summary

01395 - 271 Simi Valley Landfill

Permit Period: 1/1/2012 to 12/31/2012

SIC Code 4953 - Landfills/Incinerators

DEVICE NO: 14588 1 - 10000 Gallon Waste Water Storage Tank, with vent line connected to the Landfill Gas Collection System

SOURCE CLASSIFICATION CODE	SCC Units	Prmt Annual Throughput	Max Hourly Throughput	Hours Per Year (if used)
50182599 - Landfill Condensate Tanks	Year	1.0000 Year	0.0001 Year	Calculate Hourly Using 8760 Hrs/Yr

POLLUTANT	Tons/Yr	Lbs/Hr	Uncntl EF	Cntl Factor	Cntl EF	APE?	HPE?	EF Over	CF Over	Control Device
Reactive Organics	0.07	0.01	139.0000	1.0000	139.0000	Y	Y	Y		

DEVICE NO: 17198 1 - 105 BHP Caterpillar Diesel-Fired Emergency Standby Engine, Model 3304D1, Serial No. 83Z03236, I.D. No. 900235

SOURCE CLASSIFICATION CODE	SCC Units	Prmt Annual Throughput	Max Hourly Throughput	Hours Per Year (if used)
20200103 - Diesel ICE - g/hp-hr<1000	BHP-g<1000	2100.0000 BHP-d<1000	10.5000 BHP-d<1000	Calculate Hourly Using 200 Hrs/Yr

POLLUTANT	Tons/Yr	Lbs/Hr	Uncntl EF	Cntl Factor	Cntl EF	APE?	HPE?	EF Over	CF Over	Control Device
Reactive Organics	0.00	0.02	1.0670	1.0000	1.0670	Y	Y			
Nitrogen Oxides	0.03	0.35	15.1000	1.0000	15.1000	Y	Y			
articulate Matter	0.00	0.02	1.0790	1.0000	1.0790	Y	Y			
Sulfur Oxides	0.00	0.01	2.4150	0.1000	0.2415	Y	Y			Low Sulfur 0.05 fuel
Carbon Monoxide	0.01	0.08	3.2840	1.0000	3.2840	Y	Y			

TABLE 1
CURRENT POTENTIAL TO EMIT EMISSION SOURCE ESTIMATES FOR THE LFGTE ENGINE NO. 1 & 2
SIMI VALLEY LANDFILL AND RECYCLING CENTER
SIMI VALLEY, CALIFORNIA

CAS NUMBER	COMPOUNDS	Molecular Weight (g/Mol)	Ave. Concentration of Compounds Found in LFG (ppmv)(b)	Pollutant Flow Rate to 2 LFGTE Engines (tons/yr)(c)	LFGTE Engine Destruction Efficiency (%) (d)	Maximum Emissions from 2 LFGTE Engines (lbs/hr)	Maximum Emissions from 2 LFGTE Engines (lbs/day)	Maximum Emissions from 2 LFGTE Engines (tons/yr)
Hazardous Air Pollutants (HAPs)(a)								
71-55-6	1,1,1-Trichloroethane (methyl chloroform)	133.41	0.0200	2.12E-03	98.0%	9.70E-06	2.33E-04	4.25E-05
79-34-5	1,1,2,2-Tetrachloroethane	167.85	0.0300	4.01E-03	98.0%	1.83E-05	4.39E-04	8.02E-05
75-34-3	1,1-Dichloroethane (ethylidene dichloride)	98.97	0.1760	1.39E-02	98.0%	6.33E-05	1.52E-03	2.77E-04
75-35-4	1,1-Dichloroethene (vinylidene chloride)	96.94	0.0410	3.16E-03	98.0%	1.45E-05	3.47E-04	6.33E-05
107-06-2	1,2-Dichloroethane (ethylene dichloride)	98.96	0.0979	7.71E-03	98.0%	3.52E-05	8.45E-04	1.54E-04
78-87-5	1,2-Dichloropropane (propylene dichloride)	112.99	0.0346	3.11E-03	98.0%	1.42E-05	3.41E-04	6.23E-05
67-63-0	2-Propanol (isopropyl alcohol)	60.11	7.9080	3.79E-01	98.0%	1.73E-03	4.15E-02	7.57E-03
107-13-1	Acrylonitrile	53.06	0.2000	8.45E-03	98.0%	3.86E-05	9.26E-04	1.69E-04
71-43-2	Benzene	78.11	1.9600	1.22E-01	98.0%	5.57E-04	1.34E-02	2.44E-03
75-25-2	Bromodichloromethane	163.83	0.3110	4.06E-02	98.0%	1.85E-04	4.45E-03	8.11E-04
75-15-0	Carbon disulfide	76.13	0.1400	8.49E-03	98.0%	3.88E-05	9.30E-04	1.70E-04
56-23-5	Carbon tetrachloride	153.84	0.0300	3.67E-03	98.0%	1.68E-05	4.03E-04	7.35E-05
46-358-1	Carbonyl sulfide	60.07	0.3200	1.53E-02	98.0%	6.99E-05	1.68E-03	3.06E-04
108-90-7	Chlorobenzene	112.56	0.1200	1.08E-02	98.0%	4.91E-05	1.18E-03	2.15E-04
75-00-3	Chloroethane (ethyl chloride)	64.52	0.1420	7.30E-03	98.0%	3.33E-05	7.99E-04	1.46E-04
67-66-3	Chloroform	119.39	0.0200	1.90E-03	98.0%	8.68E-06	2.08E-04	3.80E-05
75-45-6	Chlorodifluoromethane	86.47	0.3550	2.44E-02	98.0%	1.12E-04	2.68E-03	4.89E-04
74-87-3	Chloromethane (methyl chloride)	50.49	0.1020	4.10E-03	98.0%	1.87E-05	4.49E-04	8.20E-05
106-46-7	Dichlorobenzene (1,4-Dichlorobenzene)	147.00	0.4580	5.36E-02	98.0%	2.45E-04	5.87E-03	1.07E-03
75-43-4	Dichlorodifluoromethane	120.91	1.4200	1.37E-01	98.0%	6.24E-04	1.50E-02	2.73E-03
75-71-8	Dichlorofluoromethane	102.92	2.6200	2.15E-01	98.0%	9.80E-04	2.35E-02	4.29E-03
75-09-2	Dichloromethane (Methylene Chloride)	84.94	0.4180	2.83E-02	98.0%	1.29E-04	3.10E-03	5.65E-04
64-17-5	Ethanol	46.08	27.2000	9.98E-01	98.0%	4.56E-03	1.09E-01	2.00E-02
100-41-4	Ethylbenzene	106.16	6.5800	5.56E-01	98.0%	2.54E-03	6.10E-02	1.11E-02
106-93-4	Ethylene dibromide (1,2-Dibromoethane)	187.88	0.0300	4.49E-03	98.0%	2.05E-05	4.92E-04	8.98E-05
75-69-4	Fluorotrichloromethane	137.40	0.3270	3.58E-02	98.0%	1.63E-04	3.92E-03	7.16E-04
110-54-3	Hexane	86.18	2.3240	1.59E-01	98.0%	7.28E-04	1.75E-02	3.19E-03
77-82-5	Hydrochloric acid (e)	36.50	46.93	0.00E+00	0.0%	3.14E-01	7.54E+00	1.38E+00
14887-8	Hydrogen Sulfide	34.08	38.6000	1.05E+00	98.0%	4.78E-03	1.15E-01	2.09E-02
7439-97-6	Mercury (total) (f)	200.61	0.0003	4.66E-05	0.0%	1.06E-05	2.56E-04	4.66E-05
78-93-3	Methyl ethyl ketone	72.11	10.5570	6.06E-01	98.0%	2.77E-03	6.64E-02	1.21E-02
108-10-1	Methyl isobutyl ketone	100.16	0.7500	5.98E-02	98.0%	2.73E-04	6.56E-03	1.20E-03
127-18-4	Perchloroethylene (tetrachloroethylene)	165.83	0.6400	8.45E-02	98.0%	3.86E-04	9.26E-03	1.69E-03
108-88-3	Toluene	92.13	23.4000	1.72E+00	98.0%	7.84E-03	1.88E-01	3.43E-02
79-01-6	Trichloroethylene (trichloroethene)	131.40	0.3020	3.16E-02	98.0%	1.44E-04	3.46E-03	6.32E-04
75-01-4	Vinyl chloride	62.50	0.3530	1.76E-02	98.0%	8.02E-05	1.93E-03	3.51E-04
1330-20-7	Xylenes	106.16	14.8400	1.25E+00	98.0%	5.73E-03	1.37E-01	2.51E-02
Totals: HAPs						0.349	8.383	1.530
		Molecular Weight (g/Mol)	Rep. Concentration of Compound (ppmv)	Emission Factor (lb/MMBtu)	Emission Factor (lb/hr)	Maximum Emissions from 2 LFGTE Engines (lbs/hr)	Maximum Emissions from 2 LFGTE Engines (lbs/day)	Maximum Emissions from 2 LFGTE Engines (tons/yr)
Reactive Organic Compounds (ROCs)(g)					1.37	1.37	32.88	5.98
Nitrogen Oxides (NO _x)(g)					4.97	4.97	119.28	21.77
Carbon Monoxide (CO)(g)					24.05	24.05	577.20	105.34
Sulfur Oxides (SO _x)(g)					0.70	0.70	16.80	3.07
Particulate Matter (PM ₁₀)(g)					1.75	1.75	42.00	7.67

Notes:

- List of hazardous air pollutants was from Title III Clean Air Act Amendments, 1990, and include compounds found in landfill gas, as determined from a list in AP-42 Tables 2.4-1 ("Default Concentrations for Landfill Gas Constituents, 11/98").
- Average concentration of compounds found in LFG based on site specific concentrations where available, or "Waste Industry Air Coalition Comparison of Recent Landfill Gas Analyses with Historic AP-42 Values" because source-specific data unavailable.
- Based on concentrations in Column D and an estimated maximum landfill gas flow of 583 scfm.
- Values taken from AP-42 Table 2.4-3 ("Control Efficiencies for LFG Constituents")
- Concentration of HCl is based on AP-42 Section 2.4.4.2. (11/98)
- Concentration of Mercury based on the EPA AP-42 Section 2.4 Table 2.4-1 (11/98).
- Controlled emissions of ROCs, NO_x, SO_x, CO, and PM₁₀ were based on the current permit limits

Tables:

MODEL INPUT VARIABLES:

Methane Concentration (%)	50%
Max LFG Collection Rate to Two Engines (c)	1,167 SCFM

were developed from the combined data sets. WIAC surveyed five codisposal sites and 70 MSW-only sites. The WIAC toluene and benzene data were separately analyzed by disposal site type. No significant differences were found between types of disposal sites for other compounds with one exception. Carbon tetrachloride was detected at one codisposal site but at none of the MSW-only disposal sites. The WIAC value for carbon tetrachloride includes the codisposal sites as these had only a slight effect on the calculated value. The value is reported in Table 2 as a 'nondetect' with a footnote indicating that it was found at one codisposal site.

Data Summary

The WIAC results are compared with AP-42 default concentrations in Table 2. WIAC 1 and 2 show the data prepared using past AP-42 and WIAC updated averaging methods, respectively (see Data Averaging above). The WIAC 1 and 2 concentrations are similarly reduced from AP-42 values by 76% and 80%, respectively. However simple alkane and alcohol compounds for which relatively few analyses were available disproportionately skewed the results. Omitting these compounds shows identical 56% overall reductions. Nearly identical reductions are also noted for aromatic (58%) and chlorinated (79%) compounds. Even though the AP-42 and WIAC averaging methods do not have any large overall effect, the two methods did lead to very significant differences for individual compounds (e.g., note those for 1,1,2,2-Tetrachloroethane).

Discussion

AP-42 and WIAC Differences

The differences between the AP-42 default values and the WIAC survey results may be traced to various factors. It was noted above that there are differences in the age of analyses between the AP-42 and WIAC data sets. Trends in LFG constituents have been well documented and are addressed in the next section. Apart from differences in the age of analyses, it was found that procedures used in U.S. EPA's preparation of the AP-42 defaults departed from the AP-42 guidance⁶ in its use of nondetects and the minimum number of sources used for developing default values.

The guidance specifies that nondetects should be used in the development of default values. However all nondetects were discarded in at least one AP-42 update.⁷ Nondetects may be discarded under certain circumstances specified by the guidance where these are much greater in magnitude than detects (doing otherwise would bias the default values high). However, the AP-42 documentation does not identify which values are detects or nondetects making it impossible to implement this procedure. Finally, the guidance states that default values developed entirely from nondetects should be clearly identified as such. Since nondetects are not documented, this procedure cannot be carried out.

⁶ "Procedures for Preparing Emission Factor Documents" Office of Air quality Planning and Standards, Office of Air and Radiation, U.S. Environmental Protection Agency, Research Triangle Park, NC, November 1997 (EPA-454/R-95-015 REVISED).

⁷ Phone communication (June 2000) with Stephen Roe, U.S. EPA contractor for past AP-42 revisions.

Table 2. WIAC results compared with AP-42 defaults. WIAC-1 values use AP-42 averaging methods. Some WIAC-2 values, grayed in column 2, use different methods (see text).

Compound	WIAC Sites	Concentration, ppmv		
		AP-42	WIAC-1	WIAC-2
1,1,1-Trichloroethane (methyl chloroform)	46	0.48	0.168	0.168
1,1,2,2-Tetrachloroethane	19	1.11	0.070	0.005
1,1-Dichloroethane (ethylidene dichloride)	45	2.35	0.741	0.741
1,1-Dichloroethene (vinylidene chloride)	45	0.2	0.092	0.092
1,2-Dichloroethane (ethylene dichloride)	47	0.41	0.120	0.120
1,2-Dichloropropane (propylene dichloride)	17	0.18	0.023	0.023
2-Propanol (isopropyl alcohol)	3	50.1	7.908	7.908
Acetone	8	7.01	6.126	7.075
Acrylonitrile	3	6.33	<0.036	<0.036
Benzene (Co-Disposal)	3	11.1	10.376	10.376
Benzene (No Co-Disposal)	44	1.91	0.972	0.972
Bromodichloromethane	7	3.13	<0.311	0.264
Carbon disulfide	31	0.58	0.320	0.221
Carbon tetrachloride	37	0.004	<0.007*	<0.007*
Carbonyl sulfide	29	0.49	0.183	0.183
Chlorobenzene	46	0.25	0.227	0.227
Chlorodifluoromethane (Freon 22)	1	1.3	0.355	0.355
Chloroethane (ethyl chloride)	21	1.25	0.239	0.448
Chloroform	45	0.03	0.021	0.010
Chloromethane	8	1.21	0.249	0.136
Dichlorobenzene	34	0.21	1.607	1.448
Dichlorodifluoromethane (Freon 12)	19	15.7	1.751	0.964
Dichloromethane (Methylene Chloride)	47	14.3	3.395	3.395
Dimethyl sulfide (methyl sulfide)	34	7.82	6.809	6.809
Ethane	1	889	7.943	7.943
Ethanol	4	27.2	118.618	64.425
Ethyl mercaptan (Ethanethiol)	36	2.28	1.356	0.226
Ethylbenzene	26	4.61	6.789	6.789
Ethylene dibromide	30	0.001	<0.046	<0.005
Fluorotrichloromethane (Freon 11)	25	0.76	0.327	0.327
Hexane	4	6.57	2.324	2.063
Hydrogen sulfide	40	35.5	23.578	23.578
Methyl ethyl ketone	8	7.09	10.557	12.694
Methyl isobutyl ketone	7	1.87	0.750	0.750
Methyl mercaptan	36	2.49	1.292	1.266
Perchloroethylene (tetrachloroethylene)	48	3.73	1.193	1.193
Propane	1	11.1	14.757	19.858
Toluene (Co-Disposal)	3	165	37.456	37.456
Toluene (No Co-Disposal)	43	39.3	25.405	25.405
trans-1,2 Dichlorethene	1	2.84	0.051	0.051
Trichloroethylene (trichloroethene)	48	2.82	0.681	0.681
Vinyl Chloride	46	7.34	1.077	1.077
Xylenes	45	12.1	16.582	16.582

Note: "<" indicates that the compound was detected at none of the WIAC sites.

* Carbon Tetrachloride was detected at one codisposal site but at none of 35 MSW-only disposal sites.

The guidance also states that a minimum of ten sources should be used in developing a default value (use of fewer sources results in unreliable values). However several of the AP-42 defaults were developed from many fewer samples and sometimes just one sample. In view of the high variability observed between landfill test results, it is recommended that U.S. EPA carefully review its practices in developing AP-42 defaults with fewer than ten samples. At a minimum, defaults derived from limited data should be clearly identified and users cautioned as to their questionable reliability.

LFG Constituent Declines

Large, long term declines in LFG HAP values were documented in the August 1999 WIAC report. This report focused on four active and two closed landfills in Southern California. The decline at the active landfills was concurrent with implementation of waste-screening programs that prevented the disposal of incidental amounts of hazardous wastes present in the municipal solid waste stream starting in the early 1980's. U.S. EPA's Resource Conservation and Recovery Act (RCRA) rules for MSW landfills, implemented starting October 9, 1991 (40 CFR 258.20) also began requiring such exclusion programs on a nationwide basis. Additionally, the U.S. EPA established Subtitle C requirements per the 1984 RCRA amendments that set minimum treatment standards for listed wastes. This program ensured that the treatment residuals were placed in Subtitle C landfills. The combination of these programs likely reduced or eliminated incidental hazardous waste disposal in active MSW landfills.

An attempt was made to determine whether a similar long term decline could be detected at other active landfills represented in the AP-42 database. A comparison was made of those sites that were reported by both EPA and WIAC. However it was found that many of the AP-42 landfills had coded names. The only active sites identifiably the same were those already reported in the August 1999 report. It is recommended that U.S. EPA identify the coded AP-42 landfills so that a meaningful comparison could be made with the WIAC results.

The LFG HAP decline for the two closed landfills in the August 1999 report would be unrelated to improved hazardous waste management practices. However the anaerobic decomposition processes at these sites are likely to have brought about such declines through one or more mechanism. HAP compounds will tend to volatilize into newly generated anaerobic gases; the gases together with the trace constituents will ultimately exit the landfill, removing the HAP compounds. Additionally, anaerobic processes may destroy or transform some HAP compounds.

Another factor to consider in the decline of HAP compounds is the effect of improved laboratory methodologies in recent years. Areas of improvement include utilization of more sophisticated equipment and adoption of standardized procedures for all analytical aspects. Some of the improved procedures include sample container preparation, instrument calibration, and quality assurance acceptance criteria.

Equipment and procedure improvements reduce the scatter of data, increase data reliability, minimize compound misidentifications, and lower detection limits. Detection limits are especially important since several of the AP-42 compounds have few or no detections; improved detection limits would tend to lower the calculated AP-42 defaults. One laboratory submitting data for this report indicated that detection limits were more than halved in the last five years.

Urban Air Toxics Strategy

The U.S. EPA used AP-42 defaults for the recently completed Urban Air Toxics (UAT) Strategy. A review of the UAT findings based on the newer WIAC results is presented in Table 3. For all compounds detected in LFG, municipal landfills dropped in rank among industrial sources. The

drop was typically from sixth to at least thirteenth or more. Four of the nine compounds dropped from the ranking and rank no more than 17th. The average MSW landfill contribution per compound dropped from 13% to 1.5%. One of the more dramatic findings concerns U.S. EPA's original attribution of 84% of all 1,1,2,2-Tetrachloroethane emissions to landfills; the WIAC findings show that the landfill emission level is about 2% of all sources. These findings indicate that municipal landfills have markedly less emissions, compared to other industrial sources, than U.S. EPA previously estimated.

Table 3. Summary of changes to Urban Air Toxic (UAT) emission estimates based on changes from AP-42 defaults to current compound levels measured by WIAC.

Compound	Annual Tons		Portion of UAT Inventory		Rank		Number of Sources
	AP-42	WIAC	AP-42	WIAC	AP-42	WIAC	
1,1,2,2-Tetrachloroethane	216	1.0	84.08%	2.37%	1	5	16
1,2-Dichloropropane	23.6	3.0	3.59%	1.48%	6	8	12
Acrylonitrile	389	2.2	15.28%	0.10%	3	15	17
Benzene	173	87.9	3.86%	2.00%	11	13	17
Chloroform	4.17	1.3	4.94%	1.63%	6	9	17
Ethylene Dichloride	47	13.7	1.15%	0.34%	10	*	17
Methylene Chloride	1550	367	1.67%	0.40%	11	*	17
Tetrachloroethylene	717	229	0.59%	0.19%	6	*	17
Trichloroethylene	429	104	0.64%	0.16%	13	*	17
Vinyl Chloride	531	77.9	19.65%	3.46%	2	4	17
Vinylidene Chloride	22.5	10.3	10.10%	3.45%	4	5	14

* Landfill emissions are less than for other ranked sources.

Conclusions

WIAC conducted a national survey of recent LFG analyses. Recent results from 75 landfills were analyzed using AP-42 methodologies. The AP-42 defaults were found to typically overestimate current levels by two to four hundred percent. For some of the more health significant compounds, the differences were larger yet. The overestimated AP-42 values may potentially misdirect U.S. EPA's policy development. For example, the recently completed Urban Air Toxics Strategy appears to have substantially overestimated actual landfill emissions. Furthermore, the existing AP-42 default values may adversely impact individual landfills required to use these values.

As a result, WIAC believes that the AP-42 defaults should be revised to reflect the decline in LFG constituents. The most recent AP-42 revision in 1995 added new data to older values and averaged the combined data sets. This approach is appropriate only for data that does not trend. It is recommended that older data be purged and replaced using current data presented in this paper.